GRADE 8 TEACHERS' NEEDS IN PREPARATION FOR THE IMPLEMENTATION OF THE TECHNICAL AND VOCATIONAL CURRICULUM IN EDUCATION

By

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DECLARATION

As the author of this minor dissertation, I, Melissa Steyn, declare that the work contained in this minor dissertation is my own, original work, and that it has not previously, whether in full or in part, been submitted to the University of Johannesburg or any other university for the purpose of a degree. Every effort has been made to reference all sources used and I have adhered to highest technical and ethical standards. Data has not been fabricated or falsified and strict measures have been put in place to ensure that any form of plagiarism in this minor dissertation is rejected. This minor dissertation has been professionally edited and signed off by my research supervisor as complete.

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ABSTRACT

Education has invariably been important in the transferring of knowledge and skills. The main purpose of education in schools is to educate our youth within society, to prepare and to qualify them for the world of work. However, South Africa presents with increasing dropout rates, resulting in more youth that are unqualified and unprepared to enter the workforce. These learners are unemployed and do not have access to education or training. Consequently, this adds to the existing shortage of skilled workers in our country. Our country has long since acknowledged our shortage of skills given the lack of skills training both in school and after the first exit stage. While South Africa's basic education programme is academically orientated, the education system fails our less academically inclined youth, leaving them with limited options either to earn an income or to study further. The Department of Education developed a three-stream Technical and Vocational Education system which was piloted in 2017 and planned for implementation in some secondary schools in 2018. The aim is to introduce a curriculum which will serve the diverse needs of all youth of South Africa, to encourage skills training and to develop their creativity. While secondary teachers are currently at the frontline of the delivering of this curriculum, the challenge is to train and prepare them for the implementation of the technical and vocational curriculum in education.

The aim of this study is to explore Grade 8 teachers' needs in preparing for the implementation of the technical and vocational curriculum in education. The research followed a constructivist paradigm through purposeful sampling of Grade 8 teachers as participants. Data was collected by conducting semi-structured individual and group interviews as well as photovoice. The data was analysed by using thematic analysis. By using the constructivism theory as the framework of this study, three main themes emerged. The first was 'the role of education stakeholders,' with the sub-themes, 'partnerships with industries', 'community and parental involvement', 'learner placement assessment' and the 'promoting of TVE'. The second theme referred to 'the role of the SMT,' such as 'the provision of policies, training and curricular support', as well as 'the allocation and managing of funding and equipment'. The final main theme was a focus on 'the need for professional development' amongst teachers. The

findings suggest that participants indicated a significant need for TVE in the curriculum. However, they stressed the importance of a thoroughly planned implementation in a joint effort with all stakeholders and the labour market. They stressed that the TVE curriculum needs to be implemented with the focus on long-term intervention, and to alter current negative perceptions connected to TVE. They indicated that this would improve the trustworthiness of the TVE curriculum in education.

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ACRONYMS

BGCSE	Botswana General Certificate of Secondary Examination
BTU	Botswana Teacher's Union
CIEB	Centre on International Education and Benchmarking
CTE	Career and Technical Education
DBE	Department of Basic Education
DST	Daylight savings time
ETH	Swiss Federal Institute of Technology (Switzerland)
ETSSP	Education and Training Sector Strategic Plan
FET	Further education and training
FNBE	Finnish National Board of Education
GCIS	Government Communication and Information System
HET	Higher education and training
ILO	International Labour Organisation
JCE	Junior Certificate Examination
NCEE	National Centre on Education and the Economy
NCESS	National Committee for Education Support Services
NCSNET	National Commission on Special Education Needs and Training
NDP	National Development Plan
NLFS	Namibia Labour Force Survey
NPC	National Planning Commission
NPE	National Policy on Education
NQF	National Qualifications Framework
NSA	Namibia Statistics Agency
OE	Occupational Education
OJT	On-the-job training
OTJ	Of on-the-job
RNPE	Revised National Policy on Education
SA	South Africa
SADC	Southern African Development Community
SBST	School-Based Support Team
SERI	Secretariat for Education, Research and Innovation
SFIVET	Swiss Federal Institute for Vocational Education and Training
SIAS	Screening Identification Assessment and Support
TVE	Technical and Vocational Education

CHAPTER 1:

OVERVIEW, RATIONALE, RESEARCH DESIGN AND ETHICAL CONSIDERATIONS

1.1 INTRODUCTION AND BACKGROUND OF THIS STUDY

Youth unemployment due to a lack of readiness to enter employment has been regarded as a global challenge for a number of years (Department Higher Education and Training, 2013). According to the International Labour Organisation (ILO) global unemployment is still increasing at a steady pace regardless of the amount of time in years which have lapsed since the onset of the global financial crises in 2008 (ILO, 2015). South Africa is no exception to the youth unemployment crisis. From a global perspective, the ILO identified South Africa as having the ninth highest unemployment rate in the world (Business Tech, 2016). Statistics SA emphasised this identification in the Quarterly Unemployment Survey (third quarter of 2018): "a decline of 16 000 (after 31 000 jobs were lost in 2017) … to 9 733 000 in the formal non-agricultural sector in the quarter ended in September 2018". (Statistics South Africa, 2017). If this is compared to same quarter of 2016, this indicates a loss of 83 000 job opportunities. Stats SA depicts our youth (15-34 years) as "vulnerable in the labour market" (Statistics South Africa, 2017). Furthermore, the same quarterly report indicates that of the 10.3 million youth between the ages of 15-24, the 31% who were not employed were not being educated in schools or training centres either.

Future employment is a common topic in conversations amongst South African youth. In such conversations, unemployment is likely to be discussed as well, given South Africa's elevated youth unemployment rate of 31,0% in 2019, an increase from the 19,5% in the last quarter of 2018 (Stats SA, 2019). Unemployment is thus a valid concern amongst South Africans. Therefore, there needs to be a variety of career paths that youth can pursue to benefit society. Consequently, this has implications for the education system in that youth in South Africa require access to a variety of subjects or fields of training that would ensure that they are job-ready upon completion of their high school career. Unfortunately, youth unemployment and a shortage of job opportunities have significant influences on career choices, resulting in many youths being employed in 'last resort' vacancies. So too, a lack of knowledge and skills

education in schools further hinders youth from entering occupations in industries that they prefer or becoming entrepreneurs.

The government's attempt to address the challenge of youth readiness to enter the labour market (and thus youth unemployment) is to focus on technical and vocational education (TVE) in schools (Centre for Development and Enterprise, 2012). UNESCO-UNEVOC, an international centre for Technical and Vocational Education and Training concerned with the education and development of skills to ensure employment, defined Technical and Vocational Education and Training (TVET) as a system for the acquiring of knowledge and skills for application in the world of work. Different countries have used various terms to describe the practice, which include "Apprenticeship Training, Vocational Education, Technical Education, TVE, Occupational Education, Vocational Education and Training (VET), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc.". (UNESCO-UNEVOC, 2006). Nevertheless, its aim is to ensure that youth are equipped with skills to enter the world of work. For consistent referencing and clarity, this study will use the acronym 'TVE' to refer to technical and vocational education in schools.

The importance of TVE has varied tremendously over the past 40 to 50 years. During the 1960s and the 1970s, TVE seemed to gain more attention and commitment from the government as a means of preventing youth unemployment, mostly in the form of apprenticeships (Akoojee et al., 2005). However, Akoojee et al. (2005) stated that by the early 1990s, systems for the introduction and upholding of TVE "were even further out of alignment with the labour market than in the 1970s and 1980s" (p. 2). Monetary and budgetary challenges in the 1980s caused a shift in attention to the improvement and growth of primary education (Department Higher Education and Training, 2013) much to the detriment of secondary and tertiary education, including TVE. Still, UNESCO-UNEVOC (2006) remarked on the progressive importance of TVE since the 2000s and applauded TVE developments in the 20th century for setting the stage for TVE systems in the twenty-first century.

The government's strategy to enhance successful TVE in South Africa created much excitement: the Departments of Education and the Department of Higher Education and Training (DHET) erected frameworks and acts, specifically to accommodate the

current and future skill necessities of South Africa (UNESCO-UNEVOC, 2014). The concern was that learners do not have access to skills training during their school career. Alarming dropout rates contribute to the lack of skills training. Meny-Gilbert (2012) states that dropout rates are continuously increasing, especially as learners near the Further Education and Training (FET) phase (Grades 10 – 12) of their school careers. Mr. Suren Govender, Chief Director of Curriculum Implementation and Monitoring of the DBE stated that our education system generally focuses on an academic approach to learning, often relying on the assumption that learners will enter into tertiary education (DBE, 2014). However, substantial numbers of learners do not even complete Grade 12, not to mention entering into tertiary education. The additional strategy of introducing skills training into the National Curriculum for schools would be useful, as it would allow learners who wish to, to have access to TVE in secondary school. This, in turn, would adhere to the policies and aspirations of the DHET, to strengthen schools to expand the foundations of the system into an integrated one (DHET, 2013). The need for skills training as part of the National Curriculum urged the Department of Basic Education (DBE) to develop and implement a new 3-streamed educational system before the end of the General Education and Training (GET) phase (Grades 7 – 9). The new education system focuses on skills and vocational education (DBE, 2014). Baumann (2016) explains that TVE is a concept mostly associated with the FET phase of our education system. However, the implementation of a 3-streamed educational system will provide the opportunity for our learners to choose between an academic, a technical occupational or a technical vocational stream (DBE, 2016). The three-tier system of the DBE was implemented in the curriculum in some schools in 2017 from Grade 10, to allow 23 new subjects to form part of the curriculum. This aim lies at the heart of TVE, to equip learners with knowledge and skills to enter into the world of work. The incorporation of TVE in the curriculum aims to ensure that all learners receive useful, goal-directed and effective skills training for future employment and entrepreneurship. TVE at secondary school level allows an increased number of learners access to the development of skills and opportunities. This increases their likelihood of becoming successful citizens in the world of work, to combat youth unemployment (Santwona Memorial Academy, 2017). However, for TVE to be successfully implemented, maintained and improved in the learners' school career, it is of vital importance that key stakeholders are well-informed, knowledgeable and dedicated in this field (UNESCO-UNEVOC, 2012). This

especially refers to educators as they are the key role players in introducing, assisting with and implementing skills training in schools. It is thus vital to ensure that teachers are duly prepared to effectively teach subjects in the technical and vocational streams. With this in mind, the aim of this study is to explore the needs of Grade 8 teachers in the preparation for the implementation of TVE in the curriculum.

1.2 PROBLEM STATEMENT AND RESEARCH QUESTION

TVE in South Africa has not received the amount of attention it has needed over the past few years, and more research is needed to ensure its success (Akoojee et al., 2005; UNESCO-IBE, 2010/2011). Ample information is available regarding TVET outside of secondary school; however, a limited amount of literature is available to explore, study and analyse TVE in secondary schools from a South African perspective (Akoojee et al., 2005). However, research has shown that unemployment and poverty are often either consequences or causes of learners leaving school before Grade 12 (Akoojee et al., 2005), often at the first exit stage of school (completion of Grade 9 or the age of 15) or even before this. Early dropout from school undeniably leads to youth lacking the necessary skills and knowledge to enter the labour force or to become successful entrepreneurs. Hence the necessity arises to combat unemployment by having systems, strategies, skillful plans and policies in place, such as TVE in the high school curriculum. This, together with the support from the labour force itself, will serve as an improved measure to equip the youth with knowledge and skills to help them ensure a sustainable livelihood (UNESCO-IBE, 2010/2011).

In addition to the current lack of literature regarding TVE in schools in South Africa, the application of other international TVE systems in our own context is not always possible. Countries such as Norway, Denmark and Switzerland have done extensive research regarding TVE in schools, which has ensured the successful implementation of TVE in their particular contexts. However, due to the diversities in contexts (e.g. culture, resources, wealth, support structures or First World countries vs Third World countries) (Nations Online, 2017), aspects which prove to contribute positively to TVE in one country may not be beneficial to another – one country might enjoy sufficient support from their industries while another country experiences a lack of support from their industrial sectors in the practical application of TVE (Centre on International Education Benchmarking, n.d.; McGrath, 2002).

In the third place, TVE has received extensive criticism over the years. Although successful TVE systems indicate the ability to develop and enhance skills needed for prospective employment as well as national growth and improvement (Akoojee, 2007), the system has received profound criticism on an international front (Killian et al., 2009; Ayalew, 2011). Arfo (2015) described how TVE is perceived negatively in South Africa and other African countries such as Ghana (COTVET, 2012) when referring to curriculum facilities that have become obsolete and inadequate teachers' programmes that fail to meet the demands of industries. This perception has led to many parents and learners perceiving TVE as 'the next best option' or a 'last resort' to academic education, instead of viewing academic education and TVE as different options for learners, depending on their preferences, talents, and interests.

The success of TVE in developing countries lies in the ability to serve a dual purpose geared towards sustainable development of the country (Wahba, 2017): firstly, the provision of training avenues or possible career development opportunities for school leavers; secondly, the system should offer a capable workforce to uplift the economy. These acquired and developed skills should therefore enable our youth to become self-sustainable individuals if no salaried employment is available or enable them to enter into paid employment. Thus, with the growing demand for skills required in the twenty-first century and the need to improve the current economic crisis, TVE has become more important at high school level. Yet, despite this, TVE seems to be lacking direction in order to move forward with new enhancements in the field. This could possibly relate to the limited knowledge pertaining to the subject, as well as teachers' preparedness in understanding the objectives of these skills in order to teach them to learners. As industrial requirements demand frequent change, so teachers' skills should develop continuously to stay on par with the shifting trends in industries (Obwoge, 2016). Their expertise in TVE is thus often dependent on self-training and experience (ibid.). This deficiency in effectively preparing teachers for TVE at secondary school level could have a significant impact on how prepared they are for vocational teaching. In the following paragraphs, I refer to influential researchers in the field of the preparedness of TVE teachers.

Paryono (2015) emphasised the important role of teachers when he wrote: "In academic or general education as well as in TVET, teachers are the backbone of

education and training systems" (p. 2). However, he queried the preparedness of TVE teachers; he explained that, for example, in the Southeast Asian region, the preparedness of TVE teachers is cause for concern due to the lack of quantity and quality (UNESCO, 2014). From this statement, the reader should realise that there is both a shortage of TVE teachers and a limited number of truly efficient TVE teachers in most countries. To elaborate on this concern, Paryono indicated that most educators lack industrial experience in the field of TVE. This emphasises my earlier statement: that TVE training for teachers is mostly dependent on self-training and experience.

UNESCO (2014) referred to the 2014 EFA Global Monitoring Report, describing the appeal for more effort in guaranteeing that effective learning takes place when children attend school. This can only be assured when governments provide well-qualified and enthused teachers. It aligns Paryono's (2015) concern that they do not only experience a shortage of TVE teachers; they also present with a shortage of efficient TVE teachers. SEAMEO VOCTECH (2012) stated that the challenge of quality and quantity is exacerbated by the increased enrolments in TVE schools as it calls for more teachers.

Grollmann (2008) argues that TVE and the teaching profession in general are not recognised as reputable pathways. The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training & UNESCO Institute for Statistics (2007) indicated that in most developed countries, a significant two-thirds of the workforce that comprise the foundation of the economy, are intermediary employees who obtained a considerable portion of their skills and knowledge through non-academic VET. TVE is often seen as training for the non-academic individuals to obtain some sort of employment, as opposed to natural developmental process that people go through as they improve their skills and knowledge in their vocation (Grollman, 2008). The lack of social recognition and limited compensation for teaching, including TVE teaching, might consequently discourage skillful individuals from pursuing education as a profession.

The South African public education system currently experiences a combination of the abovementioned challenges (Akoojee et al., 2005; UNESCO, 2014), creating a need for research and intervention in the field of TVE in South Africa. Considering these

challenges, I am particularly interested in the preparedness of TVE teachers in Grade 8.

1.3 RESEARCH QUESTION

The research question for this study is: What are the Grade 8 teachers' needs in preparing for the implementation of the technical and vocational curriculum in education?

1.4 RESEARCH PARADIGM

The research paradigm of a study can be described as a system of beliefs that the researcher uses as a guideline in the choice of how things will be done in the research and how to act (Willig, 2013). Guba (1990) defines a paradigm as the fundamental principles that direct action. Ponterotto (2005) stated, in simple terms, that a research paradigm sets the context for a research study. The paradigm of this study is one of constructivism within the framework of interpretivism. Interpretivism aims to define the individual reasons that drive a person's social behaviour (Terre Blanche et al., 2006).

Constructivism is based on the view that every individual creates their own way of thinking, their preferences in doing and this shapes their own reality (Bryman, 2008). It implies that people build their own understanding of the world through personal experiences and reflecting on it. Rossman and Rallis (2013) defined it as a shared understanding of reality. This can occur on either a conscious or a subconscious level. The constructivist paradigm leaves room for multiple interpretations. Elkind (2005) explained that constructivism refers to a person's reality, shaped by human intelligence from social interactions with the real world. He explained that constructivism is accepted the moment that a person involves mental processes in the understanding of reality. However, constructivism highlights the process and aim of gaining a thorough understanding (interpretation) of these unique lived experiences from the viewpoint of the individual who lives it (Ponterotto, 2005). I chose the constructivist paradigm as it allowed me to become an active participant, interacting dynamically in the enquiry. A constructivist researcher focuses on the "co-construction of knowledge" between the researcher and participant together with further the possible biases that may arise from these interactions (Edmonds & Kennedy, 2013). As a consequence, the knowledge of the researcher and participants was created,

rather than being discovered. Therefore, in this study, it is important to focus attention on the participants' socially constructed perceptions of preparedness during the research process as social interactions add to the constructions of their views and knowledge. Furthermore, it is important to take note of participants' constructed meanings, perceptions or opinions that were already in place at the start of this research. Edmonds and Kennedy (2013) explained the importance of exploring *how* participants' constructions *during* the study are different form their meanings that already existed *before* the study and *which aspects* influenced or contributed to this change. Thus, the research experience in itself serves as a further construction of people's perceptions, understanding, behaviour, beliefs, emotions and experiences. This study's interpretive paradigm allowed me to interpret participants' unique perceptions obtained through interactions.

The data of this study were investigated within in terms of ontology, epistemology and methodology (Terre Blanche et al., 2006):

- The ontology of the paradigm refers to the characteristics of the experiences being investigated. This is reliant on the subjective experiences of participants.
- The epistemology of the paradigm relies on the nature of the relationship between the researcher and the participants, entailing subjectivity in observation.
- The methodology proposes how the researcher can access the information that is necessary for this study.

1.5 QUALITATIVE RESEARCH APPROACH

Given this study's constructivist paradigm, together with the social interactive method which I used to collect data form participants, this study used a qualitative research method. Boeije (2010) described the qualitative research approach as a method in which a social occurrence is analysed, explored or investigated to find a pattern or themes which form the foundation of the theory. Thus, the greatest indicator of choice between a qualitative and quantitative research method is the way in which the research is carried out. It relates to the explanation of Bryman (2012) that the differentiating factor between these two methods is the implementation of a social theory: qualitative research is the implementation of social theory, which refers to a

description of realistic (empirical) evidence to analyse and clarify social occurrences. Thus, it determines why certain elements in a social context are related.

A qualitative approach offers researchers the space to deviate from existing standards/parameters of methodologies which may or may not form different methodologies (Kahlke, 2014). In this regard, Merriam (2009) stated that a qualitative approach is more easily defined when considering the negative: it is an approach that is not governed by a preset set of expectations or norms in the form of a familiar qualitative method (Caelli, Ray, & Mill, 2003) such as the "big three" – phenomenology, grounded theory, and ethnography (Richards & Morse, 2007). By using this method, themes can emerge naturally (Yin, 2011). It allows the researcher to investigate new experiences and to explore new phenomena to depict people's feelings, perceptions and their understanding of meaning and process (Given, 2008). The aim of this study was to explore Grade 8 teachers' needs in the preparation for the implementation of TVE in the curriculum. It enabled me to identify themes and categories that contributed to the analysis, theoretical knowledge and the understanding or recommendations for the practical implementation of TVE.

1.6 RESEARCH DESIGN

Due to the nature of the constructivist paradigm and qualitative research approach of this study, I conducted a case study. It is appropriate given the emergence of themes unique to the context (case) in a holistic approach. Yin (2009) referred to a case study as an intensive focus on the analysis of a case in a real-life context. Babbie (2001) spoke of a case study in research the focusing of attention to one or more occurrences od a specific phenomenon as encountered in groups of people. It thus emphasises a study's approach to data collection, the analysis thereof and presenting (writing) the results. Creswell (2014), Denzin and Lincoln (2005) and Yin (2009) defined a case study as an action plan to query a topic or to collect information. It aims to explore and describe multiple perceptions on the basis of, in this regard, constructivism. In this study, it applied to a group of Grade 8 teachers with a specific focus on the implementation of TVE.

1.7 SAMPLING METHOD

Sampling in research refers to the procedure of choosing units from a certain population of interest (Trochim, 2006). It involves the careful selection of participants to partake in the study (Ritchie & Lewis, 2003). This sample group should be reflective of the population from which they are taken so that when the sample is studied, results can be generalised on the population from which they were chosen.

I selected a homogenous purposeful sample, a group of participants with similar features or characteristics, representative of a whole population (Merriam, 2009). Homogenous purposive sampling is a technique geared towards the selection of a sample with as many similarities between individuals as possible. It aims to select a sample group with the same (or very similar) characteristics, traits or backgrounds.

1.8 THE PARTICIPANTS AND THE SAMPLING METHOD

For this study, a fundamental criterion had to be met: participants had to be Grade 8 teachers from the selected school. The limited diversity in criteria between participants would allow for narrowed and defined themes to emerge from collected data. Participants varied in gender and were from different age groups. They were invited to take part in this study in person. The sample consisted of six Grade 8 teachers, three of whom were School Management Team (SMT) members. Individual and group interviews were arranged to take place in participants' classrooms and offices where applicable. The focus group and photo voice group interviews were held in the staffroom. Interviews took place after school after most other staff members had left the school.

Table 1.1 below provides a summary of the participants who were involved in this research inquiry. To protect participants' identities, pseudonyms were used to withhold their real names:

Table 1-1 : Description of participants

Participant	Gender	Age	Post level
Participant A Head of Department of Grade 8 and 9. 17 years of teaching experience and 4 years as member of the SMT. Teaches Natural Sciences.	Male	38	**2 (SMT)** **Duties:** Organiser of the School-Based Support Team (SBST). Oversees the adherence to policies. Handles departmental obligations referring to subjects.
Participant B Has 14 years of teaching experience. Teaches Arts and Culture and Afrikaans.	Female	35	**1**
Participant C 20 years of teaching experience in mainstream schools. Teaches Afrikaans and Social Sciences.	Male	42	**1**
Participant D Head of Department of Grade 8. Has 34 years of teaching experience, mostly in LSEN and special schools. 13 years as member of the SMT. Teaches Technology.	Male	56	**2 (SMT)** **Duties:** Assistance with the duties of the SBST. Specialises in teacher training in the field of curriculum adaptation and assessment modification. Social and emotional wellbeing of the learners and parental support. SIAS procedures.
Participant E Head of Department of Grade 8. Has 9 years of teaching experience in mainstream schools. 2 years as member of the SMT. Teaches Mathematics (shared subject with Participant F).	Female	30	**2 (SMT)** **Duties:** Sport extramural activities. Learner needs in the field of sport as extramural activities. Manages fundraisers and aftercare. Coordinator of Learning and Teaching Support Material (LTSM)
Participant F Has 18 years of teaching experience in mainstream schools. Teaches Mathematics (shared subject) and EMS.	Female	39	**1**

1.9 DATA COLLECTION AND ANALYSIS

The significance of using the appropriate methods for studying ideas, theories, perceptions or concepts brought into the study, is emphasised by Yin (2014). Thus, in order to collect substantial and detailed data from participants, especially for triangulation, three data methods were utilised, namely semi-structured individual interviews, photo voice and group interviews.

1.9.1 Semi-Structured Individual Interviews

Savenye and Robinson (1996) defined an interview as a purposeful conversation which enables the researcher to collect data, specific to the questions and the aims of a research enquiry. Bernard (1988) explained that interview techniques may be structured or unstructured, existing in a continuum in varying degrees: in a structured interview, the interviewer has full control, following an interview schedule or protocol, the exact number of fixed questions in the same order, never navigating away from the set schedule protocol. In contrast, an unstructured interview is more informal, and the interviewer exerts minimal control over the interview (Harrell & Bradley, 2009). There is still a clear view/aim for the interview; however, the conversation is mostly lead by the participant. A semi-structured interview can be found on the continuum between structured and unstructured interviews (Harrell & Bradley, 2009). During this type of interview, the interviewer uses a guide with topics and/or questions that have to be covered. The order of questions depends on the discretion of the interviewer. The nature of this interview is conversational while the interviewer obtains comprehensive information (Savenye & Robinson, 1996). The interviewer may probe for more or other information as themes emerge from participants' responses.

I met with the participants to explain the nature and proceedings of the study, as well as to emphasise voluntary participation. Opportunities were offered for questions and queries. Participants were furthermore reminded that they could withdraw from the study at any given time. Consent forms were discussed and signed. The participants indicated that it would be most convenient to hold interviews and sessions at the school. Interviews were held in classrooms, offices and the staff room on the school premises, familiar to the participants. Permission was obtained from the principal. Dates and times were established. The interviews were audio recorded instead of

video recordings as I wanted participants to feel most comfortable to ensure true reflections. I had selected certain themes to be covered in advance (Terre Blanche et al., 2006). Although these topics were attended to in the interviews, I probed for further information as participants introduced alternative themes. This ensured a more detailed and informed collection of participants' thoughts, ideas and perspectives.

The first data collection session took place over three days: each participant was interviewed for approximately 30 minutes and the group interviews (focus group and photo voice) lasted about one hour, until all relevant information was obtained.

1.9.2 Focus Group Interviews

Lavrakas (2008) defined a focus group as a qualitative research method in which the researcher conducts in-depth interviews with approximately 6 to 8 purposively selected participants with a similar set of specific characteristics. Furthermore, focus group interviews have the characteristics of being flexible and open-ended where new ideas or thought patterns may be explored (Merriam, 2009). Participants were specifically selected for this group as they were thought to be able, informed or inclined to say something about the topic at hand. They were furthermore within the selected age range, have related socio-characteristics and seemed contented to converse with the researcher and with fellow participants (Richardson & Rabiee, 2001). Interviewees should feel comfortable to share their diverse thoughts, beliefs, feelings and opinions as this contributes to rich data collection (Merriam, 2009). Focus group interviews have the benefit of the opportunity for participants to listen to, consider and expand on or contradict the responses of others; emerging themes were thus probed and discussed amongst participants. The participants have all worked at the same school for the last eight years and were comfortable with each other. Questions similar to those of the individual interviews were posed and participants had the opportunity to listen to responses, thoughts and perceptions of other participants. Thus, this may have allowed for social constructivism to take place (learning from social encounters), relating fundamentally to the paradigm of this study. The researcher audio recorded this interview for data analysis after written consent was obtained from all participants.

1.9.3 Photo Voice

Photo voice involves the taking of photographs to express one's thoughts in a detailed manner. It is a participatory approach that permits participants to express experiences of a specific phenomenon in their own terms (Mitchell et al., 2006). Mitchell and Allnutt (2008) stated that photo voice is a qualitative method informed by art. In this qualitative method, participants are given cameras to express, define and expand on their thoughts, perceptions and experiences on a certain topic. Brown (2018) explained how participants can include photos of statues, artwork, names of buildings and information boards to mention but a few. Subsequently, participants engage in a group conversation to discuss their photographs. Together, they identify emerging themes (Capous-Desyllas & Bromfield, 2018).

In this study, participants were given the opportunity to take photographs for the second session. These photographs would depict their thoughts on the needs of Grade 8 teachers in the preparation for the implementation of TVE in the curriculum. After this, they discussed their photographs in the group to identify emerging themes.

1.9.4 Thematic Analysis

The data collected from the interviews and the photo voice method were analysed with the aim of identifying emerging themes. These themes indicated the needs of Grade 8 teachers in the preparation for the implementation of TVE in the curriculum. The data obtained in this study was analysed using the six steps of thematic analysis as suggested by Braun & Clarke (2006):

a) *Familiarisation with the data*

The first crucial step in thematic analysis cannot be skipped, as it risks the validity of the analysis of the study (Fox, 2004). Themes cannot be identified without familiarisation with the data. The main task of this phase was repeated reading of the data to ensure familiarisation of the content as well as the contexts in which it occurred. This step involved taking notes and using index cards to allow quick access to what was thought to be important content. Furthermore, it involved categorising each source of data into a folder for each participant. Each participant's folder thus contained a transcribed individual interview, a transcribed group interview,

photographs taken during the photo voice data collection technique and the discussion of emerging themes.

b) *Generating initial codes*

Recurrent patterns high frequency topics were identified and grouped. These groups of data were colour coded.

c) *Searching for themes*

Meaningful comments, phrases and photographs were grouped which proved useful in the identification of suitable divisions and graphic signals. This allowed the emergence of themes, of which some were anticipated and others unexpected.

d) *Reviewing the themes*

Pictures, recurrent words and terms were used to identify themes and sub-themes from the collected data. The identified themes were confirmed through triangulation from different sources of information. Furthermore, the emerging themes were investigated closely to avoid overlapping of themes.

e) *Defining and naming the themes*

The data (evidence) collected was reviewed to classify interconnected themes. The identification of these interrelated themes was done by considering participants' direct quotes as well as their unique illustrations. To define and name the themes successfully, any ambiguous data had to be discussed and confirmed with participants.

f) *Producing the report*

To conclude the data analysis, the researcher reflected personally on what lessons were learnt. This was a useful mechanism to answer the research question, namely, what the Grade 8 teachers' needs are in preparing for the implementation of TVE in the curriculum.

1.10 THE ROLE OF THE RESEARCHER

The difficulty of qualitative research often lies in the tendency to generalise without scientific evidence (Patnaik, 2013). This refers to the researcher's level of subjectivity, considering their personal perspectives and life experiences. The duty of the researcher is to be aware of bias to prevent skewed, unreliable or invalid results. The researcher's cognisance of personal involvement is referred to as reflexivity (Willig, 2013).

1.10.1 Personal Reflexivity

Dowling (2006) defined personal reflexivity as a continuous process throughout the study of self-awareness, assessment and re-assessment. He referred to this as self-critique by the researcher of their own personal influence in the research process. Because qualitative research is made up by a person's constructs, it relies mainly on the researcher's unique interpretive perspective. Carolan (2003) stated that, at a basic level, reflexivity aims to answer the questions 'what do I know?' and 'how do I know it?'

In an attempt to ensure thorough acknowledgement of participant feedback, I used a four-factor approach as suggested by Welty and Lundy (2013):

- *Space:* I provided a safe environment acceptant of diverse and unique views and expressions;
- *Voice:* I allowed participants to express their thoughts freely without criticism;
- *Audience:* my role was to ensure that participants felt acknowledged, that their responses were valuable and contributive to the study. I displayed genuine interest by using probing comments;
- *Influence:* by acknowledging participants' responses and input, weight was added to their perspectives. The aim was to create the notion that participants' input might influence the perceptions and thus the level and the nature of support offered to teachers in their preparation for implementing TVE in the curriculum.

1.11 CLARIFICATION OF TERMINOLOGY

1.11.1 Technical and Vocational Education

UNESCO-UNEVOC (2017) explained (as stated earlier) that TVE as a practice has been given different acronyms in different countries or areas: offers the following definition: “Career and technical education (CTE) (USA); Further education and training (FET) (UK, South Africa); Vocational and technical education and training (VTET) (South-East Asia); VET; Vocational and technical education (VTE) (AUS)”. However, in this study the researcher will refer to TVE.

Furthermore, UNESCO-UNEVOC (2017) offers the following definition:

> TVET is understood as comprising education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development which may lead to qualifications. TVET also includes a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET.

1.11.2 Youth

In this study, a significant amount of research was done regarding the statistics of various countries, with regard to employment, unemployment, pass rates and literacy. It is important to note that the 15–34 age bracket is the official definition of youth as suggested by the Africa Union and the Southern African Development Community to compare international labour statistics) (New Era, 2017; Statistics South Africa, 2015).

1.12 TRUSTWORTHINESS OF THE STUDY

Boeije (2010) emphasises that the indication of quality of a research study relies on the truthfulness of the perceptions collected. As a consequence, the question arises: are the outcomes or results reflective of the social phenomenon stated to be researched? This implies intensive focus on the analysis of the research question,

how it was formulated, how applicable it is in the field of study, the entire methodology of the research with regards to sampling, data collection strategies and analysis, and how the researcher was able to impact on the findings or results. Answers to these questions imply the legitimacy of the results of a research study and how effectively it contributes to the gap in previous research. The quality of research also refers to the objectivity of a study, the controllability of the research process that presented the results. According to Boeije, the researcher should aim to be clear and have results available for reviewing at all times, irrespective of the theoretical perspective used and the choice between qualitative and quantitative methods of the study. However, as previously mentioned, in any research approach, there is some degree of subjectivity in the interpretation of data collected in any study (Strauss & Corbin, 1998) and with reference to this qualitative study with a paradigm of constructivism while making use of a case study, the aspect of validity cannot always be justified with facts.

In this generic qualitative research study, I followed the criteria of Lincoln and Guba (1985) to ensure trustworthiness. The trustworthiness of a study comprises four elements:

1.12.1 Credibility

Credibility relates to the truth value of the study (Guba and Lincoln, 1985). It is one of the most essential factors of a study (Shenton, 2004). This was ensured through triangulation of data – a contact session was arranged with the participants to communicate the findings of the study and to address comments and queries. If participants were not able to attend this contact session, the findings were communicated telephonically. Furthermore, I made every effort to transcribe interviews accurately. Records were kept of all documentation.

1.12.2 Transferability

Transferability can be described as the extent to which these findings could be applied to another group or setting (Krefting, 1991; Shenton, 2004) This was ensured by giving a detailed description of the topic, context and methodology for this study to be compared with other settings.

1.12.3 Dependability

This refers to the consistency of the study; i.e., the likelihood of these findings to be repeated if this research had to be replicated, by similar participants in similar contexts (Krefting, 1991; Lincoln & Guba, 1985; Shenton, 2004). This was also adhered to through a process of triangulation of conversations of the focus group interviews, together with a detailed description of the methodology to obtain the data as answers to the research question.

1.12.4 Confirmability

Conformability is concerned with the neutrality of a study, the extent to which the findings are shaped by the participants instead of the researcher's own biases, interests or motivations (Shenton, 2004). This was achieved by remaining as neutral as possible and by keeping a reflective journal of all events and themes during the study.

1.13 ETHICAL CONSIDERATIONS

Elevated standards are maintained by the University of Johannesburg with regards to research by their students. Furthermore, the Department of Educational Psychology conducts continuous supervision to ensure that ethically correct procedures are followed, and that quality research is conducted.

For this study to be conducted, permission was obtained from the Faculty of Education Higher Degree Committee (Appendix A) and the Gauteng Department of Education (GDE) (Appendix B). Ethical clearance was requested from the Faculty Ethics Committee to guarantee an ethically sound study. More central to the research context, consent was obtained from the principal and the School Governing Body of the particular school involved in the study (Appendix B). Informed consent was requested from every participant who took part in the study (Appendix C). Informed consent is a crucial step in the research process as this ensures that participants were willing to participate. Another crucial element is an ethical framework (Terre Blanche et al., 2006). This increases the validity of the study and endorses the findings. Thus, the following aspects were considered and utilised in the study:

1.13.1 Collaborative Partnership

In research, the term ‘collaboration’ in a researcher-participant partnership can be defined as an equal partnership between the researcher and the participant (RCR Administrators, 2018). This implies that the results obtained from the study derive from shared effort between the researcher and the participant. Given the paradigm of this study (constructivism), a collaborative partnership was embraced. Constructivism is the lens or one’s worldview that, instead of passive intake, learning is an active and constructive process (David, 2015a). Constructivism involves three fundamental themes, namely interaction, one party being more informed than the other (or maintaining an alternative perspective) and the zone of proximal development (David, 2015b). It is important to note that one party does not always stay the ‘more informed’ source of information: different opinions and perceptions are constructed in social interaction as well, building on one’s previous or existing knowledge.

A researcher is often seen as the knowledgeable individual who studies, observes or interviews others. The negative implication of this is that there is often no (or an uncomfortable) connection between the researcher and the participant. Participants are then regarded as ‘passive subjects’ instead of ‘active agents’ (Heron & Reason, 1999). This atmosphere might prevent individuals from sharing their thoughts comfortably, in an environment free from judgement. A more successful type of study is a process in which research is conducted *with* people rather than *on* people (ibid.). The nature of the relationship between the researcher and each participant respectively, as well as participants as a group, was one of legitimacy, respect and safety (security). Through dialogue, I aimed at making participants feel that their voice was heard, considered and valuable. In a joint effort, perceptions of TVE were expanded. The individual and group interviews as well as the photo voice group session created space for constructivism to occur, resulting in informed responses and input in the study. I displayed respect for diversity amongst participants themselves and their input.

1.13.2 Fair Selection of Participants

The fundamental requirement for participant selection for this study was that educators had to be Grade 8 teachers. Selection was furthermore based on contextual factors

such as availability, travelling and access to information. Willingness to participate in the study was deemed as a crucial characteristic. I am currently employed at a primary school in Heidelberg. Participants in the study were employed at a high school in the same area. Although learners at the schools in Heidelberg are multicultural, many educators are white. Amongst participants there was one coloured male. Given this uncontrollable limited availability of diversity in cultures amongst participants, I ensured diversity in all other possible aspects, such as age, years of teaching, gender, and language.

1.13.3 Informed Consent

Nijhawan (2013) described informed consent as both an "ethical and legal requirement for research involving human participants" (p. 134). Informed consent finds its roots in the Nuremberg Code, the Declaration of Helsinki and The Belmont Report (ibid.). These guidelines are sets of ethical principles regarding human experimentation or research studies (Carlson et al., 2004; Jarmusik, 2019; Sims, 2010) given past undesirable dehumanising experimentation (Jarmusik, 2019). Informed consent involves making the participant duly aware of all facets of the study, their rights, the purpose and procedures of the study as well as possible risks and benefits of participation. Awareness is a crucial determining factor as this influences participants willingness to participate in the study. Each participant should give voluntary consent for partaking in a research study, based on basic human rights. The individual's best interests should at all times take precedence over the interest of research and science (Sims, 2010) just as ethical considerations should at all times take precedence over regulations and the law.

Voluntary informed consent was obtained from every participant. They understood the nature and processes of the study.

1.14 OVERVIEW OF THE STUDY

Chapter 1: Overview, rationale, research design and ethical considerations

This chapter served as the outline and provided the context for the study. The central aim together with the objectives are stipulated. The research methodology was explained by illuminating the research approach, paradigm and design. Additionally,

the role of the researcher was outlined as well as the ethical considerations that were adhered to in this study. Finally, an explanation of key concepts central to the topic and the research question was provided. This minor dissertation is presented in four chapters. Consequently, the following three chapters focus on:

Chapter 2: Literature review

Chapter 2 shifts focus to a critical analysis of the relevant literature, theories and sciences that directed this study. This chapter firstly focuses on the implementation and preparedness of TVE in other countries of the world (international perspective); secondly on TVE from an African perspective; and finally, the preparedness for the implementation of TVE in South Africa (national front).

Chapter 3: Data analysis and interpretation of findings

The third chapter is a representation of the findings of this study. The results obtained from the study are interpreted with reference to the literature reviewed in the previous chapter. For the purposes of this study, three main themes and sub-themes were identified and investigated in this chapter.

Chapter 4: Summary of findings, conclusion and limitations

The concluding chapter of this study provides an outline of the findings and conclusions. I made recommendations and discussed the contributions and the strengths and limitations from the study. In conclusion, I provided recommendations for future research.

1.15 CHAPTER SUMMARY

The foundation of this chapter was the provision of a summarised outline of this research analysis. It provided a description of the Grade 8 teacher and the need to prepare for the implementation of TVE in the curriculum. The underlying theory that informs this research was investigated and the aim of this study was provided. The research methodology pertaining to this study was stated to the reader: the research paradigm, approach and design, the data collection methods and analysis. Furthermore, the role of the researcher was highlighted. Finally, ethical considerations

and key concepts were illuminated. Chapter 2 provides an exploration of the relevant literature concerning the research question.

CHAPTER 2:

LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this study is to determine the needs of Grade 8 teachers in the preparation for the implementation of TVE in the curriculum. This chapter provides the background on the theoretical framework that informed this study. Furthermore, it presents a thorough review of the literature relevant to the topic. It focuses on TVE from an international perspective (in three countries where TVE currently proves to function successfully) to gain an improved understanding of possible factors that contribute to a successful TVE system. The three countries discussed in this review are ranked under the global Top 10 TVE countries, namely Germany, Finland and Switzerland (Gray, 2017, World Economic Forum, 2017). These are the 10 best countries for skills and education. Attention is then paid to three African countries and finally I focus on TVE in South Africa, the current strengths and challenges of our TVE system and how it may impact on the needs of the Grade 8 teacher in the preparation for the implementation of TVE in the curriculum. This section also focuses on the three-tier education system which was piloted in some schools in 2017 and was planned to be implemented in 2018.

2.2 THEORETICAL FRAMEWORK OF THIS STUDY

2.2.1 Constructivism in Psychology and Education

Constructivism acknowledges that reality is created by the human mind (Donald et al., 2002). Due to the nature of this construct, it can be perceived as a subjective theory. This term, widely known both in the fields of education and psychology, has been researched by many theorists and philosophers for many years. Many a statement and conclusion have been made on the theory of constructivism; however, the underlying theme remains; that constructivism is a person's subjective establishment of conclusions, thoughts, experiences and perceptions (in laymen's terms, making sense of the world) by experiences in their context, in other words, the daily experience in the world at large.

The Social Constructivism Theory was developed by Lev Simkhovich Vygotsky (1896-1934), a Soviet (Russian) psychologist (David, 2015b). Known for his work in developmental psychology, especially constructivism, he introduced a theory of the development of higher cognitive functions. He stressed the role of social context, on language and mediation in the process of development. His theory is valued in the field of education (Donald et al., 2002). Learning theorists focused on the importance of cognitive, moral and social development in the process of learning whereas Vygotsky found social interaction to be fundamental in the process of social growth. He argued that "the relationship between the role of the effect and the intellect is emphasised when simple or complicated tasks are tackled" (Maree, 2004). The central argument in Vygotsky's theory is thus that development occurs through 'social relationships' and 'social interactions' (Donald et al., 2002). Great emphasis is placed on language as the vehicle for the transferring of knowledge (Berger & Luckmann, 1991). In this theory, language (in social interactions) becomes the creator of our thoughts and perceptions instead of thoughts and perceptions constructing our language (Burr, 2003).

There is a direct correlation between Vygotsky's theory of constructivism and two aspects of this research study: the first being the constructivist theoretical approach applied in this study (methodology) and secondly, the central aim of this study, namely preparation. With the specific focus on preparation, one of the central arguments of this study entail that preparing, even the perception thereof, takes place through constructivism – the adding of new information to existing knowledge, the key factor being constructivism as a social phenomenon. This may even be clear in the focus group interviews, as participants have the opportunity to co-construct the data they offer. The effects as well as the importance of social interactions as described in this particular research methodology and in Vygotsky's theory, refer to social relationships, interactions and contexts and the role that it plays in learning. During the conduct of this research, the effects and importance of constructivism will be highlighted together with the extent of its impact on this particular study.

2.2.2 Inclusive Education

This dissertation focuses on a constructivist approach for inclusive classroom practices. The development of an inclusive philosophy has been an exhilarating

improvement in South Africa. This philosophy has become internationalised (Dyson & Forlin, 1999) and has created much excitement in education. The inclusion of all learners, including learners presenting with special needs, in the education system implies more than only the physical placement of learners with specific difficulties in mainstream class contexts.

In 1994, when also South Africa became a democratic country, UNESCO arranged a conference in Salamanca, Spain. This conference had the specific aim of formulating an international policy to ensure education for all. Explicit attention was paid to the provision of special needs education in inclusive schools (UNESCO, 1994). The education of all disabled individuals was incorporated.

The following exhilarating movement was the implementation of our new Constitution of the Republic of South Africa, including the Bill of Rights (Republic of South Africa, 1996). The welcoming statement of "everyone has to right to receive a basic education" created an increasing awareness of the importance of including all learners in the same classroom. It is also evident that inclusion for all is not a privilege, but rather a right as enforced by our Constitution.

The National Commission on Special Education Needs and Training (NCSNET) and the National Committee for Education Support Services (NCESS) also contributed to the movement towards inclusive education in our country (Naiker, 1999). After this, followed the Education White Paper 6 (EWP6) (Department of Education, 2001) emphasising the involvement of all learners in the same classroom irrespective of their uniqueness and individuality. One of the most remarkable assertions I have come across in the perusal of literature on inclusion, is one of Landsberg et al. (2016); they argued that inclusive education is not only a possible strategy to be used as a foundation in education, but rather is an approach which will ensure a democratic and a fair country.

It is my opinion that the principle of inclusive education has significance for TVE in South Africa. In preparing learners through education to be successful and useful citizens of our country, vocational education cannot be disregarded. It should rather be regarded as one of the most important aspects in education, especially when one considers the frightening statistics of unemployment as already discussed.

Furthermore, education cannot be seen as not a once-off and static event, but rather something that should be incorporated in every person's lifespan, also known as lifelong learning (UNESCO, 2015).

2.3 TVE ON AN INTERNATIONAL FRONT

2.3.1 TVE in Finland

2.3.1.1 Brief background

Finland, a European country is the 65th largest nation in the world bordering Norway, Sweden and Russia (World Atlas, 2018). With a population of 5.5 million citizens, Finland has a density of 18 inhabitants per square kilometre (ibid.). Helsinki is Finland's capital, the largest city in the country. Finland is known for its creativity, style, artistry, and high-tech expertise (Alho, 2010). This is vital factor in the consideration of TVE: a country's cultural norms, values and thus perceptions of production and skills expertise play a significant role in the need and future success of the implementation a TVE system (Finnish National Board of Education (FNBE), 2015). Finland has maintained a stable 99% adult literacy rate since 2008 (Knoema Corporation, 2017). (Note that literacy includes basic numeracy, the ability to make simple calculations).

2.3.1.2 TVE in Finland

The FNBE states: "The mission of vocational education and training (TVE) is to foster the skills required in working life, promote employment and self-employment, develop the world of work and support individuals' lifelong learning" (p.6). They regard their TVE education system as the central part of Finland's economic competency and affluence for supporting learners to become balanced and contributive citizens. It provides learners with the necessary skills and knowledge to further their studies and shapes their attitudes, providing skilled and knowledgeable individuals to the world of work (Grahn-Laasonen, 2017). Furthermore, TVE in Finland ensures both qualitative and quantitative prediction and matching of long-term training and labour force requirements based on supply and demand (ibid.). In addition, the FNBE attributes the success of TVE in Finland to two main aspects:

- their system of competence-based qualifications (FNBE, 2010) through the emphasis on a competence-based approach instead of a system-centred approach (Grahn-Laasonen, 2017), and
- the establishment, maintenance and continued reform of a highly permeable education system which ensures lifelong learning and no “dead ends” (Omnia, n.d.).

The Finnish TVE education system includes early childhood education and care (0–5 years), pre-primary education for 6-year-olds, followed by compulsory basic education and preparatory training for competence-based qualifications between the ages of 7–16 (CIMO, 2012). Flexible continuity is ensured by pre-vocational programmes: after basic education, learners go to secondary education to either general upper secondary schools towards completion of matric, or upper secondary vocational education and training. However, TVE resulting in vocational qualifications is a popular choice (Koukku & Paronen, 2016). For learners who have not obtained entrance into a secondary level institution, an additional year of basic education can be attended (FNBE, 2015).

Apprenticeship training programmes lead to upper secondary vocational qualifications through a matric examination, qualifying learners for further studies depending on the choice of the individual (CIMO, 2012). A major advantage of the system is that both the matric qualification and the vocational qualification at school level can allow the learner to enter either one of two complementary sectors, namely universities and polytechnics (or universities of applied science) to ensure adult learning through adult programmes (FNBE, 2010, 2015; UNESCO-UNEVOC, 2013). It is in this uniqueness that the system finds its flexibility, high permeability, and ensures that there are no dead ends (i.e. that every qualification leads somewhere). To summarise, TVE is thus offered as:

- School-based programmes: three years of education and at least half a year of on-the-job training;
- Apprenticeship training: in preparation for competence-based qualifications;
- Polytechnic education: offering polytechnic bachelor’s and master’s degrees;

- Vocational Special Education (VSE): for individuals presenting with severe disabilities or chronic illness. VSE occurs in small groups with the focus on skills and practice rather than theory; and
- Competence-based qualifications: for the recognition of a person's vocational proficiencies obtained through personal practice or training (Koukko et al., 2013).

A person's vocational competencies are recognised through a competence-based qualification, regardless of the means by which these abilities were obtained, i.e., on-the-job training (OJT) or further education (CIMO, 2012; FNBE, 2015). Thus, every individual can progress according to their own individualised programme as learners may complete a number of qualifications at the same time (Koukko et al., 2013). Consequently, competency-based tests may be taken over time or at a specific stage. The FNBE appoints Qualification Committees who work together with test organisers to arrange tests. The functioning of the education system in Finland can be seen in Figure 2.1 overleaf.

2.3.1.3 TVE teacher training and support in Finland

The National Agency for Education in Finland (2019) acknowledges that the skills and competences of educators serve as the fundamental factor in defining the proficiency of teaching. The followings aspects are ways in which the Finnish system caters for the needs of TVET teachers:

- *Promoting the benefits and changing perceptions of TVE*

Grollmann (2008) stated that there are two main challenges to the professionalisation of teachers in vocational education and of vocational education itself: "the low status of vocational education and the problem of increasing the status of the teaching profession in general" (p.535). Rivkin, Hanushek, and Kain (2005) explain that the improved status of vocational teachers is a substantial driver in improving the quality of vocational education. The status of these educators is done by raising their required level of qualifications together with the education they receive to obtain these qualifications (King Rice, 2008). Finnish schools make a concerted effort to publicise the benefits of TVE to parents and the community (Subrahmanyam, 2014). The publicity promotes interest and involvement which not only advances the status of TVE but also depicts the TVE teacher as a trained professional (Chen et al., 2018a).

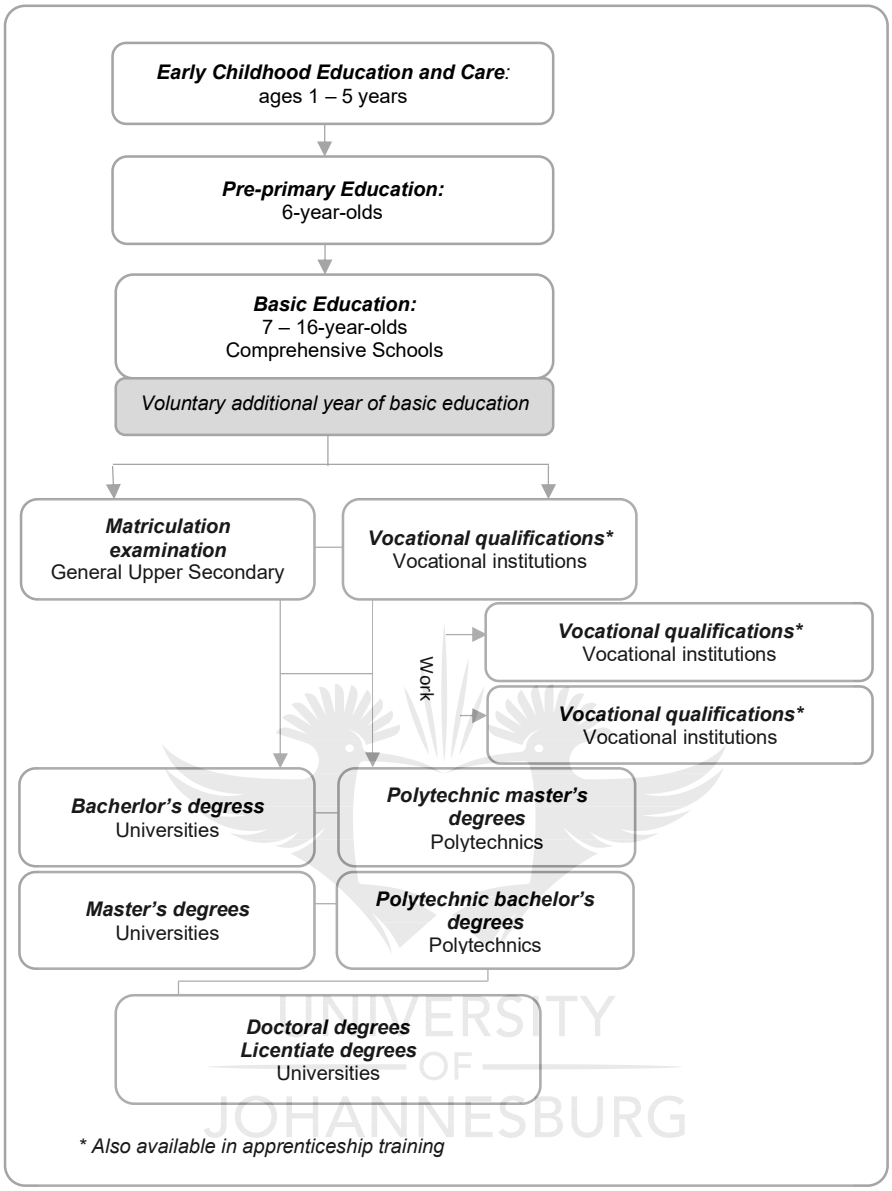

Figure 2-1: Education System in Finland (adapted from FNBE, 2015 and Koukko et al. 2013)

- *Enhanced qualification requirements*

The National Agency for Education in Finland (2019) proudly states that Finland's teachers are highly educated. In 2010, teachers' compulsory qualification levels were increased, and pedagogical training became obligatory to improve quality, effective TVET teaching, and the status of TVET in Finland (Subrahmanyam, 2014). In 1999, Finland introduced unified teacher's qualifications (Chen et al., 2018a): to become a teacher in any educational institution (from elementary school to adult education), the requirement is a minimum of 60 pedagogy qualification credits. Teachers are required to have mastered the core teaching and learning skills together with the knowledge

applicable to any type or kind of education. Thus, pedagogical learning serves as the core of all teacher training in Finland. Teacher training can then occur simultaneously (with the pedagogical content included in the programme) or consecutively, with the pedagogical training occurring upon completion of the initial degree. Furthermore, teachers need to have acquired the eligibility requirements as stipulated in the laws and regulations as well as the requirements for teaching in Finland (Räisänen & Räkköläinen, 2014). This includes a master's degree as well as 3 years' work experience for vocational educators. All teaching degrees are obtained from research universities (REF). Five of these universities offer a pedagogical qualification with an emphasis on TVE (Chen et al., 2018b). This means that all learning is based on the latest research and findings which in turn ensures highly educated teachers.

- *Joint planning of the curriculum, training, and support*

The Finnish education system embraces the idea of the joining of forces (teachers, industries and other stakeholders) in the planning of the TVE curriculum, training and mentoring (Subrahmanyam, 2014). Their TVE curriculum is at a national level, devised by collaborative input from these stakeholders through their experience and research (OEP, 2018).

- *Teacher autonomy and flexibility*

Given their compulsory high level of education, teachers are encouraged to be autonomous and flexible in their teaching methods and programmes (Chen et al., 2018a). Their independence and flexibility generally allow them to be more confident in their teaching. Continued teacher training and development offered by the state (mostly municipalities) contribute to their level of confidence, ensuring high-quality teaching (Subrahmanyam, 2014).

- *Effective legislation to prevent 'dead ends'*

With the focus on efficacy, the Finnish TVE system is built on legislation (Subrahmanyam, 2014), such as their Constitution, Basic Education Act and General Education Policy. The basic principle of the Education Act is that all people must enjoy access to high-quality education and training, while their Constitution highlights the

basic right to education and culture (PERFAR, 2014). Their education policy is built on the lifelong learning principle that citizens can progress to more competitive levels of education, irrespective of the pathways they chose in their past (PERFAR, 2014). These policies warrant continuous development and growth of the TVE system, which, in turn, ensures that teachers have access to continuous training, raising the status and quality of TVE (Subrahmanyam, 2014).

- *Adequate funding*

Finland has adequate funding which means that TVE does not need to compete with primary and basic education for funds (Subrahmanyam, 2014). This allows the state to pay teachers' reasonable remuneration, to improve the teaching environment and to finance professional development.

2.3.2 Germany

2.3.2.1 Brief background

Germany is in the centre of the European continent. It was the first country to implement daylight savings time in 1916, while in the midst of World War I (Expatica, 2017). Germany is responsible for many of the world's most famous inventions, such as the automobile engine, motorcycle, pocket watch, jet engine and LCD screens (ibid.). The country borders nine other countries namely Luxembourg, Austria, Poland, Denmark, Belgium, Switzerland, the Czech Republic, Netherlands and France. In 2017, the number of citizens were measured at 237 persons per square kilometre (Trading Economics, 2018a). Thus, Germany has the second highest population density in Europe after Russia. Not only is the German economy classified as the largest in Europe, it is also the fifth largest economy globally (Zimmermann, 2018).

Germany has a distressing history which ranges from World War I in 1914 (McNicoll, 2018), World War II (1939) and the separation amongst citizens which lasted 44 years (the Federal Republic of Germany in the west and the Communist German Republic in the East), known as the Cold War. These conflicts left the German economy in ruins (National Geographic Kids, 2018). Although many believe that Germany will never truly be able to eliminate deep-rooted divisions (von Salzen, 2016), the country has

become one of the wealthiest and most successful in the world (Countries of the World, 2018). In the most recent statistics, the literacy rate in Germany remained stable at 99%, which has been the case since 2008 (Knoema, 2017). A well-known European news corporation maintained that the most vital foundation of Germany's industrial strength is still "the country's education system" (Anderson, 2012).

2.3.2.2 TVE in Germany

Whereas Finland bases the success of their TVE education system on competence-based qualifications, the German TVE education system is lauded for its dual system which means that there is less than 5% unemployment (Gray, 2017). Germany is broadly known for its low unemployment rate (Parliamentary Monitoring Group, 2016) especially attributed to their high-quality TVE system (Anderson, 2012; Gray, 2017). The German TVE system places emphasis on the following two features (University of Cologne and Federal Institute for Vocational Education and Training, 2014): firm-based training together with school-based theoretical training in upper secondary school, one to two days per week. On these school-based days, learners also receive education for their core subjects such as German and Mathematics. The dual education and training method is accompanied by governance from both the public and private sectors, such as vocational schools (public governance) and firms (private governance).

The German TVE system has received considerable attention, especially form countries with increasing unemployment rates (Parliamentary Monitoring Group, 2016). Their system provides vocational education and training opportunities for youth who are both able and unable to enter tertiary education. Because learners are based at firms as well as schools, receiving both practical and theoretical training, the system also provides a smoother transition from school into skilled employment. The consequence is a broad ranged qualification structure – employed individuals with or without TVE or tertiary degrees (Thelen, 2014). However, the system has been criticised for channelling academically inclined learners into apprenticeship training, preventing or diverting them from entering into higher or tertiary education (Powell & Solga, 2011). Even if children have obtained university exemption, many prefer the fully qualifying TVE programmes. These are often in line with parents' expectations due to access to inexpensive and less uncertain variations of non-tertiary TVE allowing

children from the working-class to avoid going to university (Mayer et al., 2007, cited in University of Cologne and Federal Institute for Vocational Education and Training, 2014). Yet, the system has strongly been advocated and fortified by several role players i.e. associations, firms, trade unions, politicians and parents from the German population as approximately 60 percent of apprentices are absorbed by their practical training firms, an advantage that currently outweighs university education in Germany (University of Cologne and Federal Institute for Vocational Education and Training, 2014).

The German education system, although a complex one, is known to produce highly educated and skilled graduates (The German Way, 2018). Learners are obligated to complete a minimum of 9 years of education, although in some states, the legal school attending age is from 6 years through to 18 years. Home schooling is illegal in Germany (University of Cologne and Federal Institute for Vocational Education and Training, 2014), no matter what challenges may arise. Figure 2.2 overleaf illustrates the German School System.

2.3.2.3 TVE teacher training and support in Germany

Grollmann (2008) stated that Germany currently has the highest level of academic requirements to become a vocational teacher. To support and train vocational teachers, Germany has put the following strategies in place which ensures quality teaching:

- *Increased qualification requirements*

All the provinces in Germany have formed state institutes which offer FET (Romanova & Melnyk, 2017). These institutes are subordinate to the Ministries of Education, responsible for teacher training. The state perceives lifelong learning as essential (Behringer & Schönfeld, 2014). However, continuous learning and development for vocational teachers in Germany is not only essential to ensure an effective TVE system: it is compulsory (Deissinger, 2017).

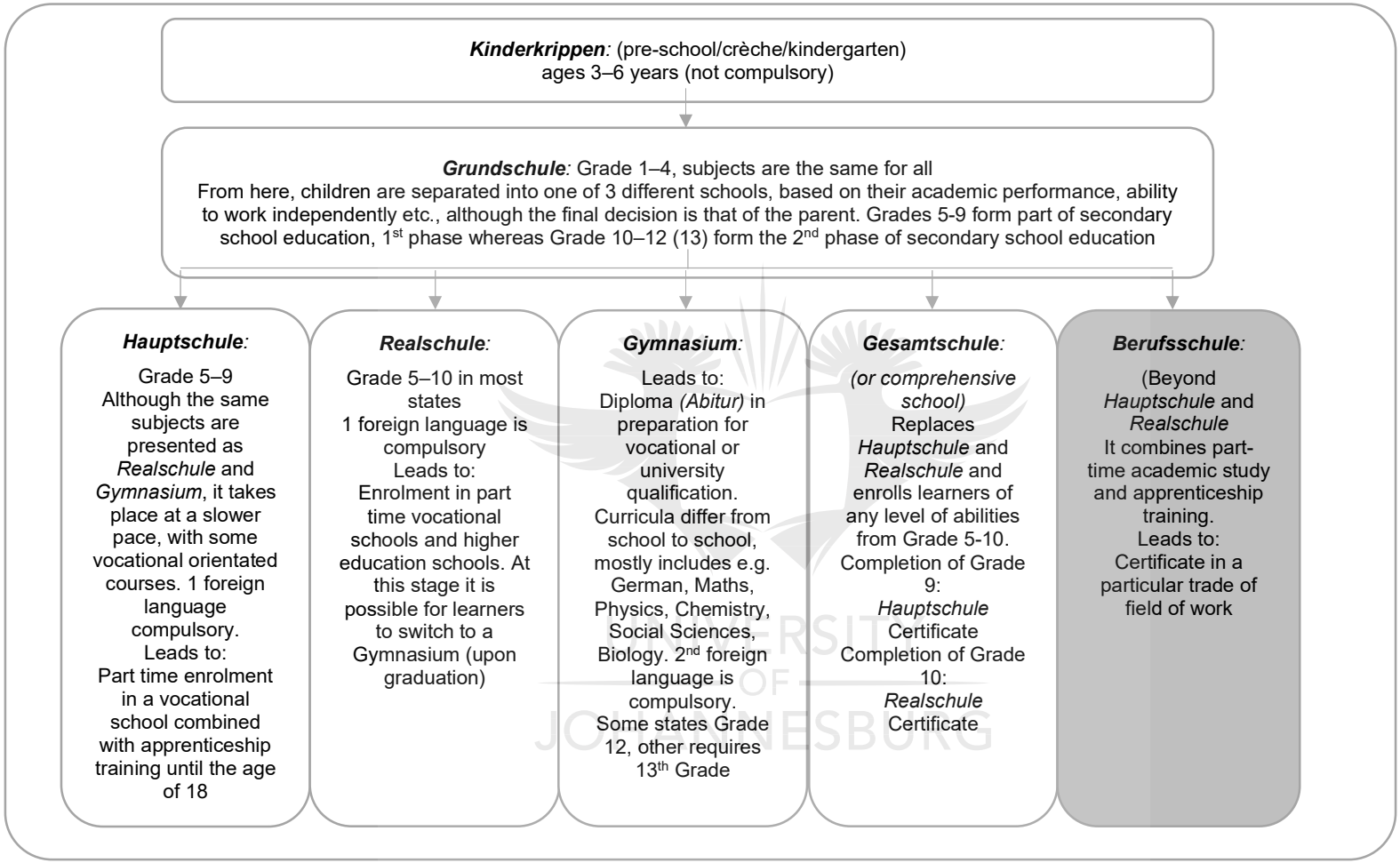

Figure 2-2: The German education system (information obtained from The German Way, 2018; Expectica, 2018; and UK-German Connection, 2019.)

- *Collaborative planning of the curricula, training and examination*

Dittrich (2010) effectively decribes this collaborative partnership in his article: “In Germany, TVET teachers have to be able to work in the framework of the cooperative system of vocational education and training, where companies and vocational schools share the responsibility for education and the training of young adults” (p. 68). Fürstenau et al. (2014) elaborated on this partnership by explaining that training places (companies approved by the chamber or guild) where learners are placed for practical training play a significant role in the organisation, administration and examination of TVE: they “[establish] inter-company vocational training centres, [allocate] training warranties to companies, [reform] apprencticeships and [control] the training quality” (Fürstenau et al., 2014, p. 432). Thus, although the federal government develops training regulations, the trade unions and employers (work places) develop the apprenticeship programmes. This includes the type and duration of the apprenticeship, the occupational profile, the framework and requirements for examination purposes (ibid.). The school, thus the TVE teacher, complements the training done at training places by teaching both general knowledge and vocational-specific knowledge. The Standing Conference of the Ministers of Education and Cultural Affairs of each Länder (state) provides the national level curriculum designed for each training programme or apprenticeship (Kultusminister Konferenz, 2015).

- *Effective legislation to prevent ‘dead ends’*

The efficiency, continuity and sustainability of an educational system relies on whether or not it is based on a country’s legislation (Odimayo, 2019). Without legislation, a teaching system would lack structure, purpose and security for all stakeholders, as legislation aligns a system with governmental regulations.

- *Promote the benefits of TVE*

German citizens hold their TVE education system in high regard as it has proven to be successful in promoting their economic growth (Federal Ministry for Economic Cooperation and Development, 2017). TVE thus has a favourable image for German citizens as well as the vast number of stakeholders involved in their TVE system. In a governmental synthesis for the Federal Ministry for Economic Cooperation and Development (Germany), Clement (2014) describes the progressive cycle of the

positive perception of TVE: a good image of TVE motivates a growing number of youth to choose TVE for future occupations. These enthused youth generally obtain better outcomes, resulting in earlier employment in industries. Employment of non-academic, vocational graduates ensures advancement of companies which in turn contributes to the appeal of TVE, or specific trades or professions in the TVE sector. The resulting growth in the industry calls for less risky and more lucrative investment by the government, industries and other stakeholders. This fruitful advancement in the system increases the attraction for qualified teachers to choose TVE as a career path for themselves. Consequently, both the quality and image of TVE improves, encouraging more youth to choose technical and vocational education.

2.3.3 Switzerland

2.3.3.1 Brief background

Switzerland's full Latin name, Confœderatio Helvetica (Helvetic Confederation) originated from the Celtic Helvetti People who first lived in Switzerland, approximately 100 years B.C. This explains the abbreviation, CH (The German Way, 2019). Switzerland is modestly populated with approximately 8.3 million citizens (Expatica, 2019). It is a landlocked country located in central Europe and shares borders with Germany, Austria, Liechtenstein, Italy and France. There are four official languages in Switzerland (The German Way, 2019). Approximately 64% of Swiss citizens speak German, around 22% speak French, while around only 8% speak Italian. Fewer than 1% speak Romansch.

Switzerland has more than 3 000 municipalities, situated in 26 cantons (Egli et al., 2019). Citizens are encouraged to participate in all levels of politics – they are involved in both national and subnational decision-making (ibid.). This ensures lower tax rates due to voters' freedom to review and approve expenditures. Furthermore, citizens may contest any law passed by Parliament: in order to do so, they need to obtain 50 000 supporting signatures against the promulgation of the law within 100 days (Expatica, 2019). Thereafter, voting is held at national level to either accept or reject a law based on a simple majority.

Switzerland has been described as one of the world's most innovative countries (Egli et al., 2019). In 2017, the World Intellectual Property Organization was topped by

Switzerland for the seventh consecutive year for leading the world in innovation (Expatica, 2019). Switzerland repeatedly ranks in the Top 5 of the World Economic Forum's lists of the most competitive economies. The Swiss TVE system (named VET in Switzerland) is described as a critical component of the Swiss economic engine (NCEE, 2015). In this report, research by the Centre on International Education and Benchmarking and the NCEE, the Swiss VET system is one of the most successful in the world; approximately 70 percent of Swiss youth participate in the system and it keeps youth unemployment rates low which is an uncommon achievement.

2.3.3.2 TVE in Switzerland

Based on a dual system like many other European countries, the Swiss TVE system has been dubbed as one of the strongest in Europe (NCEE, 2015). The system's private-public partnership offers learners the opportunity to learn both at school and in the workplace. Serving 70 percent of Swiss youth in preparation for the so-called blue and white-collar jobs, the Swiss TVE system has been presented as the 'gold standard' for upper secondary TVE (Renold & Caves, 2017; NCEE, 2015) given its constructive effect on the Swiss economy, its significant involvement from industries and their remarkably low youth unemployment rate: for example, in May 2019, Swiss youth unemployment decreased to 1.8% from 1.9% in April 2019, the lowest rating since September 2001 (Trading Economics, 2019). One of the greatest motivators for a successful TVE system is that apprenticeship training is deeply embedded in the Swiss culture, says Schellenbauer, chief economist at Avenir Suisse, a think-tank in Zürich (Avenir Suisse, 2017). He commented on the strong influence of a culture on a country's education system: "Apprenticeship schemes are extremely dependent on culture – and you see that in Switzerland. It is difficult to export that kind of culture" (Atkins, 2017). Switzerland's TVE system ensures no dead ends as an individual can switch between academic education and vocational training (OECD, 2009). Continued assessment of supply and demand (the responsibility of State Secretariat for Education, Research and Innovation (SERI)) ensures that learners receive education and training in jobs necessary in the industry, linked to market trends (SERI, 2019). Swiss employers strongly support the education system due to their perception of TVE as a primary contributor to the ongoing success and attainment of the Swiss economy

(Atkins, 2017). This is evident in their nearly full employment and their elevated living standards (Roth, 2017).

The Swiss education system is largely decentralised: instead of the federal government, the 26 cantons are responsible for the compulsory education system (Swiss Education, 2019a). While SERI is responsible for Swiss education, the decisions of what is taught, when and how is made by the various cantons (SERI, 2019). SERI does, however, provide a basic framework and oversees education in Switzerland (Ung-Kono, 2016). This means that each canton runs its own education system: every canton has an education department with unique school calendars, educational structures, teaching methods and curricula which are coordinated with SERI and other cantons (Expatica, 2019). Education is compulsory in Switzerland until completion of lower secondary school; this is applicable to all children, even those without legal residency (ibid.). Switzerland has local schools, similar to South Africa's government schools, as well as private schools. However, in Switzerland, only about 5 percent of children attend private schools. Although local education is free, education is maintained by charging parents exceptionally high taxes (Ung-Kono, 2016). Children and youth who present with special educational needs receive specialist education, support and intervention, based on their constitutional rights, up to the age of 20 years. In such cases, learners are assessed by specialised agencies of each particular canton, to determine intervention and support in the best interest of the learner (Ung-Kono, 2016).

Compulsory education commences at the age of 4 and lasts for approximately 9 to 11 years (Swiss Education, 2019a). The Swiss education system is made up of:

- Primary education: inclusive of two years of pre-school education (kindergarten), the first learning cycle lasts eight years. Although kindergarten in not compulsory in some cantons, one year of kindergarten is obligatory (Swiss Education, 2019b). Most children, however, attend kindergarten for two years (ibid.).
- Lower secondary education: commences from the age of 11/12 and lasts three years (Expatica, 2019), except in the canton of Tinico where lower secondary level lasts four years (Swiss Education, 2019c). Compulsory education in Switzerland ends after this. Three different models of teaching are offered at this level: streamed, cooperative or integrated model. A single model can be presented in the

entire canton, or a canton may agree that the municipality can select one of these models (Swiss Education, 2019c). Although there is no national examination after lower secondary education, some cantons administer a final examination for completion of this level (Ung-Kono, 2016). Certain cantons have initiated a school leaving certificate upon completion of the lower secondary level.

- Upper secondary education (VET): With upper secondary education occurring after compulsory education, learners are not obliged to attend this level of education. However, more than 90% of Swiss youth enrol in upper secondary education (Expatica, 2019). Upper secondary education is made up of three tiers: a dual-track VET programme, a school-based VET programme and Baccalaureate school or specialised school (Swiss Education, 2019d). General education includes the Baccalaureate or specialised schools: although they do not award professional qualifications, they serve as a preparatory stage for tertiary-level education programmes. Vocational education and training are mainly done at partnering training companies as an apprenticeship for three to four days per week. This occurs in conjunction with theoretical education at a VET school for one to two days per week (dual VET programme). However, vocational education and training can be done at a full time VET school as well school-based VET programme) (SERI, 2018).
- Tertiary-level education: Students gain access to an extensive range of both academic and practical degree programmes at universities or professional education institutions, given they have obtained a Baccalaureate or a Federal Vocational Baccalaureate (Swiss Education, 2019e). Access can however be granted with other qualifications, depending on the institution. Students can attend cantonal universities and Federal Institutes of Technology (ETH), universities of applied sciences or universities of teacher education (SERI, 2018). The Swiss TVE programme allows students to change from academic routes to practical programmes and vice versa (OECD, 2009).

2.3.3.3 TVE teacher training and support in Switzerland

The Swiss Federal Institute for Vocational Education and Training (SFIVET) offers an extensive range of courses and training for educators in vocational schools, for TVE practitioners, for instructors in training companies, and so on, in either governmental

or private institutions (SFIVET, 2019). Training is specifically aimed at strengthening the TVE professional's comprehension of the dual TVE system, to enhance competence in pedagogy and instruction, to increase familiarity with tools and techniques to improve labour market functioning as well as unique training based on an individual's needs given their specific teaching context (ibid.).

Teacher education and training is completed at universities of applied sciences (Swiss Education, 2019). Universities of teacher training and education carry the responsibility for the initial as well as ongoing education and training of teachers. Degree programmes offered combine theory and practice and teachers are generally trained to become competent in teaching all levels of education, including teaching learners with special needs. Teacher qualifications normally take three years to complete for a basic degree while teaching from lower secondary school and onwards requires a master's degree in teaching (SFIVET, 2019). Continuous learning and development are obligatory in Switzerland to maintain a high level of competence (Skillsonics, 2019).

2.4 STRENGTHS AND WEAKNESSES OF THE TVE SYSTEMS OF INTERNATIONAL COUNTRIES

2.4.1 Permeability

Over the last two decades, Finland, Germany and Switzerland have been successful in a decreasing youth unemployment by maintaining highly permeable education systems (UNESCO, 2015).

2.4.1.1 Finland

The Finnish TVE system has become well regarded by learners in Finland as almost 50% of youth enter into vocational upper secondary education immediately after completion of basic education (Koukku & Paronen, 2016). This indicates a growth of 10% over the last 10 years in Finland (ibid.).

2.4.1.2 Switzerland

The Swiss state that they owe their success to the high level of permeability in their TVE system, which ensures that there are no dead ends at any stage (OECD, 2009).

Learners and students (as well as adults) are able to follow more advanced education and training prospects, shift from general education to vocational training or vice versa, and even mature adults are able to make changes to their working careers given the high permeability of these three systems (OECD, 2009).

2.4.1.3 Germany

Germany values its permeable system too; they take pride in the fact that their TVE system automatically leads to university entrance qualification. However, learners seldom enroll in university as their TVE system caters for both their theoretical and practical learning. Nevertheless, the optional pathway to university education and training ensures elaborate options from both the vocational and academic fields. This in turn, results in more job opportunities (Expatica, 2018).

2.4.2 Accessibility

Accessibility embraces lifelong learning, an essential factor of the education systems of all three these countries.

2.4.2.1 Finland

Finland aims to ensure permeability of their system by guaranteeing accessibility for both youth (learners) and adults (Subrahmanyam, 2014). The Finnish place emphasis on the promoting of TVE by maintaining and instilling a positive regard of the TVE system. The Finnish are of the opinion that a cynical communal bias of TVE may have a detrimental effect on employment (FNBE, 2015; Subrahmanyam, 2014). This, they reason, is because such bias may prevent youth from enrolling in TVE. They state that in many countries TVE is often regarded as the next best option for learners who are less competent to cope with the demands of an academic curriculum (ibid.). TVE finds its low status in the colonial past of a country, referring to social injustice, or training for the so-called inferior groups across cultures, dubbed by many as the ‘blue-collar jobs’ (manual labour). This stands in contrast to employment in which academic competency is required, also referred to as the ‘white-collar jobs’ (‘professional jobs’) (Scott, 2018). Finland has focused its attention on altering the social perceptions of TVE through fundamental amendments in legislation, policies and campaigns (Koukku & Paronen, 2016; Subrahmanyam, 2014).

2.4.2.2 Germany

According to Anderson (2012) the limited stigma attached to the German vocational education and training serves as the central foundation of success – vocational education and training is not perceived as a second-best option to academic education in Germany. Rather, it is viewed as two parallel systems complementing each other in which individuals are enabled to flourish in the fields they prefer. In Germany, all learners are accommodated in the system as well. This includes learners who require individualised attention and support or learners with challenges to learning and development. These learners are especially catered for by the *Hauptschule* schools, allowing learners not only to progress at a slower pace, but to obtain the same qualifications as learners who graduate from a *Realschule* (UK-German Connection, 2019). Furthermore, in many German states, the legal school-going age is up to the age of 18, allowing learners a longer time to receive TVE in schools, as opposed to other countries where the first exit stage is at the age of 15 or completion of Grade 9 (which is the situation in South Africa). Families, often from low socio-economic groups or child-headed homes, often obligate learners to drop out of school to earn an income or take care of siblings. The higher legal school-going age ensures, at least to some degree, that learners have to stay in the school system (The German Way, 2018).

2.4.3 Partnerships with Industry

2.4.3.1 Finland

To combat a lack of FET opportunities, Finland's government makes a concerted effort to prevent a mismatch between job supply and demand in the world of work (FNBE, 2015). They research the type of skills necessary in the job market and produce methods and processes for individuals to acquire these skills through TVE through qualitative and quantitative foresights (Koukko et al., 2013). Thus, the aim is to create a congruent balance between supply and demand together with qualification structure requirements and the necessary training to become competent in the world of work. The Finnish TVE education system ensures that there are no dead ends in education and training (FNBE, 2015; Koukko et al., 2013). Furthermore, their unemployment rate is at an astounding 6,8% (Trading Economics, 2018a).

2.4.3.2 Germany

The German TVE system is currently viewed as the strongest know-how system to ensure vocational education and training for all learners to combat youth unemployment (Expatica, 2018). This is because industries in Germany are familiar with the advantages of TVE, strengthening the partnerships and opportunities between schools and the working sector (Deutsche Welle, 2018). Germany views its dual system as the most valuable aspect of its TVE system, based on the continued involvement from industries (Deutsche Welle, 2018). The dual system ensures that learners receive both practical and theoretical education, privately and publicly governed, which in turn ensures firms of trained, qualified and successful workers as employees. (The German Way, 2018), (Expatica, 2018); Learners spend half of their time in classroom education and the other half at firms for practical OJT, generally at a single firm, allowing them to earn a modest but monthly income (Deutsche Welle, 2018).

2.4.3.3 Switzerland

Switzerland's TVE system prioritises modern and well-resourced equipment and training environments (OECD, 2009). Because training is shared by several institutions and training companies, funding of up-to-date equipment does not rely solely on the school. With each approved training company staying on par with the latest developments, technology and equipment, learners are able to experience high-quality practical training (Skillsonics, 2019). Furthermore, Swiss vocational teachers and trainers are well-informed, trained and prepared (OECD, 2009). Although a professional degree must be obtained before a person can become a TVE teacher, bodies such as the SFIVET provide continuous compulsory training (SFIVET, 2019).

Switzerland emphasises collaboration amongst all stakeholders of its education system: "One mission – three partners" (SERI, 2018). The partnerships between the cantons, the Confederation and all professional bodies involved works efficiently given the functional operation of the Swiss TVE system (OECD, 2009). The Swiss argue that the dual-track tactic of learning ensures an easier transition into the world of work: although TVE can be done at a full time VET school in Switzerland, it is the less

popular option – most learners choose to experience practical hands-on training in the industries to become more equipped for the world of work (SERI, 2018).

The Swiss prioritise continuous market research for an in-depth understanding of the labour market to ensure the maintenance of a well-functioning TVE system (SERI, 2018). Continuous market or industrial research is done by SERI and SFIVET to obtain and maintain a thorough understanding of the demands for occupations and professions for which there are current employment vacancies (SERI, 2018). The direct connection between education and the labour market serves as the central reason why Switzerland has managed to maintain amongst the lowest ratings of youth unemployment in Europe (Atkins, 2017; SERI, 2018; Ung-Kono, 2016).

2.4.4 Weaknesses

Considering the aim of TVE, the Finnish, German and Swiss TVE systems do not appear to have major weaknesses, especially considering their ability to reduce unemployment. However, acceptance into university can prove to be a challenge due to entrance examinations (Kaila, 2017). Kaila (2017) stated that in some faculties, minimal percentages of applicants are accepted. She explains that this is to limit the number of university students. Thus, if a learner is set on academic education at a university and fails the entrance examinations, it may take several years for them to be accepted into university. Some have suggested acceptance into university based on matriculation results; however, universities prefer entrance examinations (ibid.).

Secondly, the fact that parents generally make the decision to enrol learners in either a vocational or academic pathway can be challenging. Deutsche Welle (2018) claims that this often has a negative impact on the growth and maintenance of TVE in that parents often view vocational training as “consigning their kids to hard, dirty blue-collar jobs” (para 24) as opposed to the academic, white-collar office jobs.

Lastly, it is a time-consuming process to familiarise local firms, parents and learners with the advantages of the TVE system, to put legal frameworks in place, together with accreditation for training in schools, apprenticeships and tertiary education (Cockrill, 1999; Deutsche Welle, 2018; Mayer, Muller, & Pollak, 2007; Powell & Solga, 2011; Thelen, 2014).

The low status of TVE is often based on quality concerns: TVE is often associated with substandard achievement, poor quality delivery and limited prospects (Koukku & Paronen, 2016). Furthermore, TVE teachers are often not professionally qualified to teach TVE subjects. Teachers have often taught TVE subjects purely due to the shortage of qualified teachers, or a shortage of teachers who wish to teach TVE related subjects. The challenge is exacerbated when the classrooms or workshops and equipment are outdated or not maintained (Koukku & Paronen, 2016). Consequently, many TVE systems across the globe result in dead ends, damaging or reducing faith in TVE.

2.4.5 Commentary

Given the high regard for these TVE systems, they present with many strengths. However, it should be duly noted that these systems have proven to be successful in their particular contexts – a mere carry over to another country might not prove to be as effective (Atkins, 2017).

2.5 TVE ON THE AFRICAN FRONT

Afeti (2018) former Chief Inspector of schools in Ghana, discussed the growing problem of youth unemployment in Africa. He explained that this is mostly due to poorly skilled youth leaving school seeking employment in slow growing local markets. This frustration in turn becomes evident in increased incidents of violence and crime. Afeti (2018) highlighted another detrimental consequence: that unemployed youth might become “victims of religious and political manipulation to be used as instruments of politico-religious violence or combatants in armed conflicts” (para 2). Consequently, youth unemployment serves as a potential threat to political constancy, national security and social cohesion.

TVE aims at playing two crucial roles in the national sustainable development (social, economic and environmental development) of developing countries (Wahba, 2017): firstly, to offer training opportunities and career improvement possibilities for school leavers and secondly, to provide skillful manpower necessary at every level of the economy. Consequently, developed skills should make self-reliance possible in the event of unemployment and improve the industrialisation procedure.

The researcher focuses attention on three African countries to explore the TVE systems of these countries. Attention is also paid to the level of support provided to teachers to sustain TVE in their systems.

2.5.1 Namibia

2.5.1.1 Brief background

Until 1990, Namibia was known as South-West Africa. The Republic of Namibia became independent from German and South African rule on 21 March 1990 (SA History, 2017). It is known as one of the youngest countries in the world (Kuligowski, 2017). It is located in the south-western part of Africa with a population of roughly 2.1 million inhabitants (Info Namibia, 2017).

Namibia's capital, Windhoek, has approximately 350 000 inhabitants, spread over informal and urban settlements (Kuligowski, 2017). The Namibian economy's main sectors are the mining, fishing, tourism and agricultural industries with the most influential sectors being the mining and the agricultural industries (Info Namibia, 2017). While it is believed that the diamonds found in Namibia might have flowed down from the Basotho highlands, the domain is rich in uranium too (Britannica, 2018). Mining for natural resources in this area thus includes, amongst others, diamonds, uranium, copper, zinc and marble (Info Namibia, 2017). Namibia is currently the 5th largest producer of uranium and is expected to become the second largest producer in the future (Index Mundi, 2018).

The wellbeing of Namibia's economy is strongly reliant on natural resources from their mining industry such as copper, diamonds, uranium, gold, tin, silver, lithium, zinc, salt, hydropower, agriculture, forestry and fish (Mabizela, 2005), serving as the key attractors for foreign investments. Secondary industries are made up of manufacturing and construction while the tertiary industry comprises e.g. wholesale, retail trade and repairs; hotels and restaurants; transport and communication and real estate (ibid.).

2.5.1.2 TVE in Namibia

In a recent report recorded by the National Planning Commission (NPC) for the Office of the President, 'Status of the Namibian Economy', current unemployment rates

caused concern (Iikela, 2018): it stated that the country's labour market remains vulnerable, as work opportunities were decreasing while unemployment continued to increase (New Era, 2017). The Namibia Labour Force Survey of the NSA estimated the unemployment rate at 37,3% in 2017 in comparison to 34% in 2016. This is not far from the "all-time high of 37,6% seen in 2008 during the global financial crisis", reported Sakeus Iikela in The Namibian (Iikela, 2018). The same report noted the increase in the working-age population of more than 55 000 first time entrants into the labour force, while the ILO confirmed the estimated 43,4% rate of the youth population remaining unemployed (Statista, 2018).

As with many other African countries, Namibia's most significant cause of youth unemployment is the 'skills gap' – the limited number of qualified employees (Fischer, 2018). Fischer explains that 20% of employed citizens have no qualification or even training in their field and that only 45% of these employees attended primary school. Given the skills shortage and consequently the rising numbers of unemployment in Namibia, the mission of TVE is to develop a skilled workforce and to ensure that the country becomes a knowledge-based economy (KBE) (UNESCO-UNEVOC, 2015).

Compulsory primary school education lasts for 7 years in Namibia: 3 years of junior primary and 4 years of senior primary education (Scholaro, 2019). Secondary school starts with 2 years in junior secondary education (compulsory) with a choice between academic or educational pathways. The TVE curriculum in secondary education consists of a pre-vocational and a technical stream. Learners who enroll in TVE take six core curriculum subjects and choose 3 TVE subjects, such as design and technology, metalwork and welding, computer studies and hospitality (Scholaro, 2019). The optional senior secondary education level lasts 3 years, both in the academic and vocational streams (UNESCO-UNEVOC, 2018). When learners pass Grade 11, they receive the National Senior Secondary Certificate Ordinary (UNESCO-UNEVOC, 2015). Thereafter they proceed to Grade 12 and attend programmes at TVE institutions, or they may prefer to enter the labour market (ibid.). Tertiary TVE programmes can be done at the Polytechnic of Namibia and continues up to postgraduate level (UNESCO-UNEVOC, 2018).

The Namibian education system is managed by two ministries, namely the Ministry of Education, Arts and Culture and the Ministry of Higher Education, Training and

Innovation (UNESCO-UNEVOC, 2015). The latter governs the TVE system in Namibia. The Namibia Training Authority (NTA) ensures that a sustainable skills delivery system is maintained to teach quality TVE that match the current and changing needs of all industries of the Namibian workforce (ibid.). While the University of Namibia handles teacher training, the Polytechnic of Namibia trains TVE teachers. However, the NTA is responsible for the quality of TVE teachers and trainers. Lastly, the Namibia Qualifications Authority (NQA) and the NTA are jointly responsible for the quality of TVE programmes (UNESCO-UNEVOC, 2018).

2.5.2 Botswana

2.5.2.1 Background of the country

Botswana is a landlocked country, located in the middle of Southern Africa. The country became independent from Britain on the 30th of September, 1966 (SA History, 2018). Although Botswana was one of the poorest countries when it became independent from Britain, it is generally known and described as an inspiring development success story (World Bank, 2018). Its development to an upper middle-income country is largely attributed to substantial diamond wealth (ibid.). However, despite impressive economic growth, Botswana experiences a significant level of inequality amongst citizens living in different regions of the country. Batswana (a term referring to inhabitants of Botswana), mostly residing in rural areas in the southern part of the country do not enjoy good living standards and find it almost impossible to secure employment (Makwinja, 2017). Youth unemployment reached an all-time high rate of 35,7% in 2016 (Statista, 2017), regrettably transforming youth, who are supposed to be first time entrants into the world of work, into discouraged work seekers before even securing their very first job.

2.5.2.2 TVE in Botswana

Akoojee et al. (2005) explained the significant effect of a country's history on the formation of TVE and education as such. Education in Botswana has developed from a history of discrepancies between the welfare of different ethnic groups in which less fortunate citizens especially from rural areas did not enjoy the privilege of access to education. Consequently, education in Botswana saw two philosophical reforms, one in 1977 and the other in 1994 (Makwinja, 2017). Tabulawa (2009) explained that the

Botswana education system was to create critical thinkers, problem solvers and innovative learners. After the country gained independence, the divided and isolated ethnic groups envisioned an inclusive form of education, one offering access to all. Better known as 'Education for *Kagisano*', meaning 'education for social harmony' aimed to ensure unity and accord amongst all citizens. This vision served as the foundation of the National Policy on Education (NPE) of 1977 based on four pillars: democracy, development, self-reliance and unity (World Data on Education, 2006).

Although the NPE was based on principles such as development and self-reliance, teacher-centred approaches remained the norm, with the educator being the bearer of knowledge, attempting to educate facts purely for examination purposes as dictated by the curriculum (Makwinja, 2017). A second policy came into effect in 1994, to attend to issues regarding access, equity and the need for improvement of quality of education (Republic of Botswana, 1994). Vision 2016 was the next policy to come into existence in education in Botswana (Botswana Government, 2014). In her research project, Makwinja (2017) illustrated that Vision 2016 too failed education in the country as all Batswana are not educated, especially given the high unemployment rates; children do not finish school; orphans and street children mostly do not have access to education; and graduates from higher education currently do not match the demands of the labour market. Her research showed that there was an overall decline in the standard and excellence of education in Botswana (Makwinja, 2017) supported by findings a study conducted by Akoojee et al. (2005). The Department of Education in Botswana then composed the Education and Training Sector Strategic Plan (ETSSP: 2015-2020) as a measure to direct the reform and improvement of education (Botswana Government, 2015). The main goal was to rectify mismatches between qualifications of learners and requirements of the labour market. However, it focused attention on the entire education system from a pre-primary level to tertiary education. Yet, many teachers claim that they were mostly unfamiliar with this policy (Makwinja, 2017) and many others voiced that the ETSSP was an redundant duplicate of the RNPE while objectives of the latter were yet to be achieved (Motlhabane, 2018). A newspaper leaked an acknowledgement by the Minister of Education and Skills Development at that time, Pelonomi Johnson, which became headline news: "We failed you". This referred to the department's inability to ensure quality education. Regardless of educational policies, schools in Botswana are said to "plummet year

after year" (Makwinja, 2017) while the vastest proportion of money is assigned to education (Boko, 2015). The ongoing allegations of "corruption and conflict of interest" do not benefit the challenge either (ibid.) Consequently, quality of education in the country has been discussed countless times in the media, mostly as an "issue" (Ratsatsi, 2005) while citizens keenly await fulfilment of educational objectives such as those of Vision 2016 to be accomplished. Discussion in the media is especially focused on the vast two-thirds of the national budget geared towards education in Botswana (Boko, 2015). Elene Imnadze (2014), World Bank resident representative in Botswana commented that "Botswana has made tremendous progress in education, but the skills sets necessary to meet employer needs are not adequate". Makwinja (2017) supported this statement: "Education was to be a vehicle for continuous positive change that would ultimately enable people to build a better world. However, the system is wanting since most students drop out of school, fail the national examinations or are unemployable graduates". An article in 'The Patriot on Sunday' (Motlhabane, 2018) discussed the declining achievements in education upon the release of the BGCSE results for 2017. Results indicated a staggering 72% failure in Botswana, indicating that education in Botswana calls for drastic intervention (Makwinja, 2017).

The Statistician General in Botswana, Majelantle raised concern regarding the number of children dropping out of primary school, often due to truancy (70.3%), at different grades (standards) without having obtained the most basic skills. (Botswana Guardian, 2018). Tshuduku, President of the Botswana Teacher's Union, continued by discussing the alarming short and long-term effects of dropout rates in the country. He argued that the low socio-economic status of families required young children to drop out of school and find other means to survive (Botswana Guardian, 2018).

The Botswana education system starts with primary school, Grade 1 from the age of 6 up to Grade 7 at the age of 13. After primary school learners enter secondary school for junior secondary education and senior secondary education. Grade 8 to 10 forms junior secondary education followed by senior secondary education, Grade 11 and 12. At this stage, only half of the school-going learners continue to senior secondary school (Business School, 2018). Upon completion of Grade 10, learners obtain a

Junior Certificate (JCE) and completion of Grade 12 awards them with the BGCSE (Class Base, 2012). Table 2.1 below summarises the education system of Botswana:

Table 2-1: The education system in Botswana

Education	School/Level	Grade From	Grade To	Age From	Age To	Years	Notes
Primary	Primary School	1	7	6	13	7	Education System: 7-3-2 (7 years of primary, 3 years of junior secondary and 2 years of senior secondary education) Duration of compulsory education: 10 years Primary School Leaving Examination (PSLE)
Secondary	Junior Secondary Education	8	10	13		3	Junior Certificate Examination (JCE)
Secondary	Senior Secondary Education	11	12	15	17	2	Botswana General Certificate of Secondary Examination (BGCSE)
Vocational	Vocational Education in Teaching / Nursing						
Tertiary	University						University of Botswana

Source: Class Base, 2012

Should school graduates wish to pursue higher education, they may enter technical colleges, colleges of education, university, or other private or public training facilities. While TVE remains an effective measure not only to uplift skills development and improve unemployment, but the model also ensures inclusive education for all. Unfortunately, TVE is not regarded as a key aspect of education in Botswana, but as a second-best option for those who do not cope with the academic demands of the school curriculum. The current education system is leads to dead ends in terms of the job market with an inability to match supply and demand and fails to meet the needs of learners and to uplift the economy of the country. Consequently, the education system does not allow learners to excel and reach their full potential.

2.5.3 Nigeria

2.5.3.1 Background of the country

Nigeria is located on the western coast of Africa. It is diversely populated with citizens speaking many different languages. Nigeria has a wealth of natural resources such as natural gas. It is Africa's most populated country (Falolaet al., 2019). Nigeria's federal and state governments are mainly responsible for the country's education; however, local governments and organisations such as religious institutions are permitted to establish both primary and secondary schools (Falola et al., 2019). Most teacher training colleges and colleges of education and technology are governed by the state.

Primary education in Nigeria starts at the age of six, lasting for six years, followed by secondary education comprised of two cycles, each lasting three years (Seyi, 2014). The first of the two cycles, the junior secondary phase comprises of academic subjects as well as an obligatory pre-vocational programme. Upon completion of this cycle, should learners wish not to continue with the secondary phase, they are permitted to enrol in apprenticeship training or join the workforce (Seyi, 2014).

In 2019, UNICEF published an article announcing a devastating statistic regarding the dropout rate of children in Nigeria: should one consider the out-of-school learners, one in every five children is in Nigeria. Thus, a staggering 10.5 million children between the ages of 5 to 14 are not attending school (UNICEF, 2019).The statistics of school attending children vary across different parts of the country, with the percentage ranging between 53% and 61%. UNICEF (2019) describes the process of returning out-of-school-learners to school as an enormous task. Unfortunately, statistics indicate that more than half of these children are female learners (UNICEF, 2019).

2.5.3.2 TVE in Nigeria

Formal technical and vocational education was developed in Nigeria during the 1960s with the aim of meeting the expected skill requirements of industrialisation (Osidipe, 2017). However, TVE development in Nigeria proved to be slow in its response to structural change and growth in the informal sector (Okorafor & Nnajiofor, 2017). As a consequence, major changes in education in Nigeria were intended to redress colonial education and equality with increased focus on vocationalisation: a new education policy was instated and aimed at introducing an effective education based on technology which could support the academic functioning for quick socio-economic growth and development (Osidipe, 2017).

The NPE was revised in 1998, 2004 and 2007 in order to make progress in meeting the developmental needs of the country (Daniel-Kalio, 2018). In 1998, the 6-3-3-4 education system was implemented, implying six years of primary education and three years of junior secondary education (jointly 9 years of basic education), three years secondary education and four years in tertiary education (ibid.). This system was specifically introduced to promote vocational education in an attempt to provide more efficient and skillful Nigerians to the labour market.

The school-based TVE programme starts at the end of Junior Secondary School and serves the following purposes (Osidipe, 2017):

- An introduction to technology as well as the appreciation thereof, mainly to stimulate interest in TVE;
- The acquisition of technical skills;
- Exposing learners to careers by presenting viable options in industries; and
- Creating a detailed understanding amongst learners of the growing intricacy of technology;

while academic education aims to provide:

- skilled future employees in the "applied sciences, technology and business particularly at craft, advanced craft and technical levels" (Osidipe, 2017);
- the technical and vocational knowledge and necessary for agricultural, commercial and economic development;
- training of the necessary knowledge and skills to enter into the world of work, or to become self-sufficient (e.g. as an entrepreneur).

The aim of the introduction of TVE at the end of Junior Secondary School is to allow a continuation of courses into the senior secondary school level. Completion of basic education at junior secondary school level offers learners the following options (based on their performance) (Osidipe, 2017):

- Senior Secondary School;
- Technical College;
- Out-of-school vocational training; apprenticeship scheme;
- Vocational Enterprise Institutions; and
- Innovation Enterprise Institutions (IEIs) – "institutions supported by the private sector and are occupation-specific vocational institutions which started to operate in 2007/2008" (UNESCO-UNEVOC, 2012, p. ?).

Tertiary-level TVE is presented in technical schools, technical colleges, college of education (technical), polytechnics and universities (Federal Ministry of Education Nigeria, 2012).

2.6 TVE IN SOUTH AFRICA

2.6.1 Brief Background of the Context

South Africa has a population of 58,78 million citizens (Statistics SA, 2019). After the democratic election in 1994, Archbishop Desmond Tutu dubbed South Africa the 'Rainbow Nation', an honourable post-apartheid depiction of the country's rich cultural diversity. This was perhaps the first step towards educational inclusion, based on the Ubuntu philosophy, meaning 'humanity towards others' or 'I am because we are'. Diversity amongst South African citizens is especially notable in the number of languages: most citizens speak 2 to 3 of the 11 official languages (Republic of South Africa, 2019). Although the largest proportion of citizens (25,3%) speak isiZulu at home (Republic of South Africa, 2016), the South Africa's Government Communication and Information System (GCIS) indicates that the language understood by most citizens of all races is English, at least to some extent. The significance of these statistics is crucial when one considers that an enormous number of South African learners are educated in a second, third, or even fourth language. Linguistic challenges imply substandard academic performance that hinder learners from reaching their full potential, one of the culprits of South Africa's heightened learner dropout rate. In 2019, reporters from the Saturday Star interviewed Professor Sarah Gravett, the Executive Dean in the Faculty of Education at the University of Johannesburg. The article focused on the 2018 matric pass rate, which leads to the concern regarding the growing dropout rate of learners in South Africa (Smillie & Mabotja, 2019). It indicated that almost 50% of learners who enrolled in Grade 1 in 2007 (12 years prior to these results) had dropped out of school. Furthermore, the article emphasised the "real matric pass rate" of 37.6% "if you include the number of 2016 Grade 10s who (did not write) matric in 2018". Such distressing statistics of learners that leave the school system without having acquired the skills to obtain jobs motivated this research inquiry. Prof. Gravett stated that the emphasis had been placed on matric for too long. She explained that attention ought to be shifted to the primary (and foundation) phase: "If you want an enduring change in the education system you must start there." (ibid.). In my view, there is, even at this level, a focus on "academic skills" with little consideration of "technical skills". This often sets children up for failure from a very young age; e.g., high failure rates within a phase and the progression system where

learners are put through to the next grade without having met the requirements of the previous grade.

Like the most countries in the world, South Africa's education system has always been influenced and shaped by politics (Bowe et al., 2017). In South Africa, apartheid served as the greatest negative influence on our education system (Akojee et al., 2005). Until the end of the apartheid regime, the country did not have an integrated or inclusive education system (DoE, 2000). Apart from the political dispensation, the British colonisation of South Africa influenced the South African education system, shaped by racist and discriminatory policies (Akojee et al., 2005).

Political influences motivated much reform in education, changes that should have benefited to the upbringing of our youth (Marishane, 2002). Educational reform in South Africa was thus welcome but exceptionally complex. The country had to revisit wrongdoing from the past to remedy the problems. Changes in the education system came with changes to legislation such as the South African Schools Act, 1996, policy changes and white papers to address the needs of South African citizens (Aitchison, 2003). The aim of educational reform was to standardise learning amongst all citizens (DoE, 2002), freeing all individuals from discrimination in all domains.

2.6.2 TVE in South Africa

The South African school system is comprised of three education bands, namely, general education and training (GET) up until Grade 9, FET from Grades 10 to 12 and higher education and training for post matric education and training (SACE, 2011). The 1994 newly elected government initiated an overhaul of South Africa's education system, including TVE. In South Africa, TVE fell into the FET band. The change of name accompanied the reform after 1994, to provide an improved description of its role (Republic of South Africa, 2013). As with basic education in South Africa, TVE in South Africa was also greatly impacted by the apartheid government. TVE in South Africa has, however, seen vast reform since 1994, moving away from inequality and the racial discrimination of the apartheid period. Before 1994, vocational education was not accessible by most citizens. Non-white South Africans were prevented from obtaining access to skills training (Barnes, 2004) as necessitated by employment, due to the extreme difficulty of technical college education. The apartheid laws enforced

separation along racial lines (Arfo, 2015). Furthermore, the opportunities and prospects as well as the quality of the education and training were not standardised amongst all citizens. The education overhaul was mainly to address the injustices and discriminations of the past, and inequalities in the access to skills development, and to create a system with the ability to provide for the development of the skills required for job readiness, employment or successful entrepreneurship (Akoojee, 2010) within one system (inclusive education). However, TVE is still stigmatised by the same negative perceptions from the past and the same perceptions as those from other countries (Hoeckel, 2008): TVE remains perceived as the education system for learners with academic challenges, for learners from impoverished contexts (low socio-economic status), or for learners with behavioural or discipline challenges. Thus, the TVE system is still perceived as a system for school drop outs (Arfo, 2015). Even after significant reform since 1994, the South African school curriculum remains academically driven. South Africa's TVE system faces the same challenges most countries see in the implementation and upkeep of a TVE curriculum. Mr. Hubert Mweli, director general of the DBE, explained that an education system geared towards academic teaching disregards any alternative pathways (DBE, 2018). He explains that such a system highlights the negative connotations of the colonial era. It creates the context for the development and preference of the so-called white-collar jobs, neglecting the development of skills for vital blue-collar jobs. Thus, a pure academic education system fails every learner who either finds it difficult to excel in this field or prefers technical and vocational education.

The demand for skills development informed the National Development Plan for 2030 targeting the development of skills of the country's citizens to ensure national economic growth (NPC, 2011). Consequently, the DoE was mandated to provide intervention to reduce the elevated dropout rate, to increase the number of learner enrolments in occupational and vocational pathways and to ensure that inclusive education informs the foundation to create opportunities for all learners (Baumann, 2016). The mandate resulted in the DBE's plans for a so-called skills revolution in alignment with the NDP's aims (DBE, 2016). Thus, it gave rise to the three-stream education system.

2.6.2.1 The three-stream education system

South Africa's curriculum remains academically driven, much to the disadvantage of TVE (DBE, 2019). In return, failure and dropout rates increase and fewer learners meet the requirements for university admissions. The ripple effect continues to trouble the economy with youth unemployment since the lack skills that ensure job readiness or entrepreneurship.

On 16 January 2016, the DBE announced a major overhaul of the education system referred to as the three-stream education system (Masondo, 2016). The aim of the system is to divide learners into one of three streams, based on their strengths and weaknesses. Currently it only includes the FET band, Grade 10 to 12. However, the long-term goal is to introduce streaming from as early as Grade 4. The three-stream model comprises the academic pathway, the technical vocational pathway and the technical occupational pathway (Equal Education, 2018). Firstly, the academic pathway refers to education as currently presented in mainstream schools and it ultimately prepares learners for entrance into university. Secondly, the technical vocational pathway prepares learners for further training after matric and focuses mainly on electrical, mechanical and civil engineering, technical drawing, technical mathematics and science (Baumann, 2016; Mlambo, 2016). Lastly, the focus of the occupational pathway is to equip learners with the necessary skills to either be employed after matric, or to be skilled to become entrepreneurs (Equal Education, 2018). Mlambo (2016) explained that learners would take the compulsory subjects namely home language, additional language, functional mathematics and life skills. Learners would then choose one additional subject from 26 skills subjects, such as spray-painting, arts and crafts, hairdressing or welding amongst others (Masondo, 2016; Mlambo, 2016). The DBE presented the following objectives of the three-stream system:

- To implement curriculum offerings which meet the diverse needs of the young people of the country;
- To empower learners to be creative and organised system thinkers;
- To promote the acquisition of skills and competencies for a changing world;
- To focus on the foundational skills of reading, writing and counting (arithmetic); and
- To improve the quality of and efficiency of learning outcomes throughout the sector.

- To ensure the parity of esteem by providing for articulation and portability across the programmes (DBE, 2019:19).

The '*Three-Stream System*' report by Equal Education (2018) stated that the long-term plan is for learners from Grade 4 to enter a skills and vocational school, allowing them to obtain a NQF level 1 certificate (equivalent to Grade 9), a school leaving qualification. After level 1 or Grade 9 has been completed, these two streams will split into the three streams as set out above. The diagram below illustrates the South African education system, inclusive of the three-stream system:

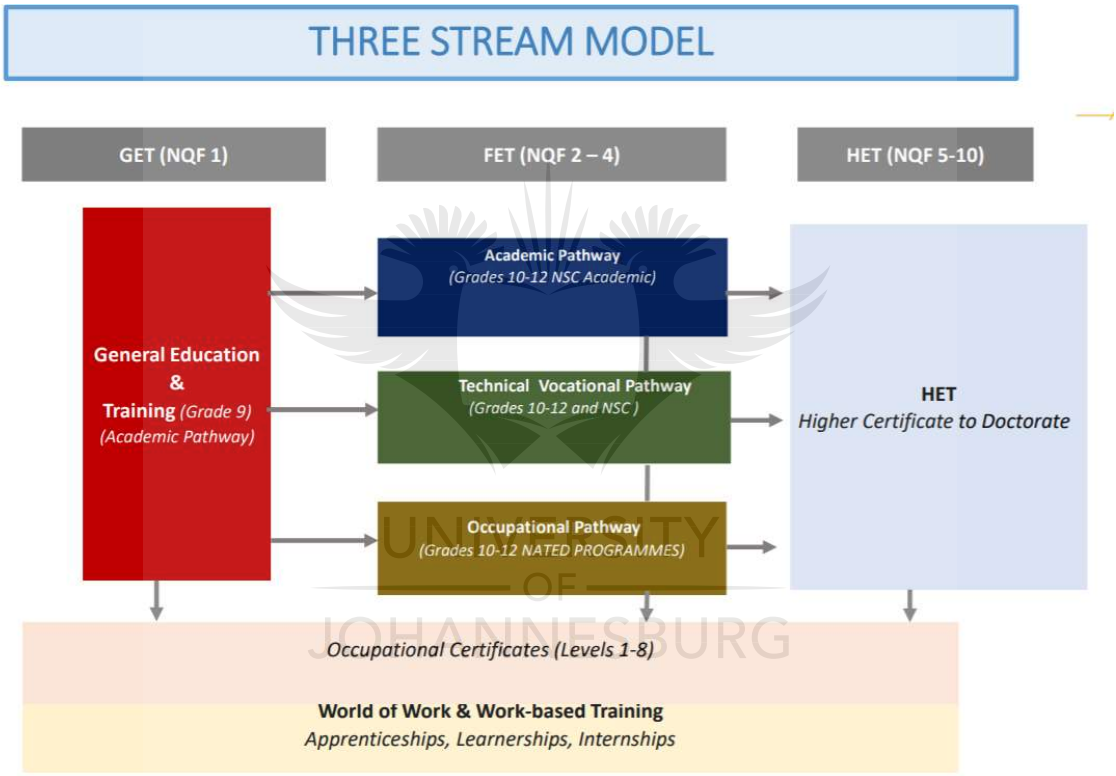

Figure 2-3: The three-stream model (SAOU, 2019).

2.6.2.2 Limitations of the three-stream education system

Although the three-stream education system was piloted in a number of schools in 2017, many educators are unaware of the system and the aims thereof. The layout of the curriculum is not known to educators either. Concern has also been raised regarding the permeability of the system; e.g., if learners (as with the three international countries discussed earlier) would be able to move between the three

streams, namely the principle of articulation. Furthermore, it is still unclear what measures will be implemented to ensure appropriate placement for learners, e.g., would learners be assessed by district-based educational psychologists? How many learners would one person be able to assess within a certain timeframe? How would parent and learner feedback be managed? Would schools have to arrange learner placement assessment? How many outsourced therapists will need to be appointed and how would the financial implications be met? Finally, teachers' competence, creativity and skills, or the lack thereof, will determine the success of this educational model.

It is evident that the three-stream education system still requires intensive support and will be subject to possible changes in the near future. Less than six months before the system was piloted, the DBE was yet to release curricular documentation for public comment (Motsepe et al., 2016). Thus, educators and the public found it difficult to gain knowledge of the system, how the curriculum would function and be supported, and how to prepare for the implementation of TVE in the curriculum. In a journal article, ButhelezI (2018) explained that educational reform cannot take place overnight but rather that it is a "long-term social [process] because of continuous interweaving of people" connecting the human societies of the past, the present as well as the future" (p. 3). Furthermore, concern was raised that this system might be a repetition of previous mistakes, that a system together with substantial financial implications might lead to dead ends as with systems from the past (Motsepe et al., 2016). Challenges like a mismatch between supply and demand or dead ends, old and outdated equipment (and curriculum), a lack of qualified educators and funding, negative perceptions of TVE, and a lack of involvement from all education stakeholders are aspects that have caused many TVE systems to fail across the globe, including South Africa (Akojee et al., 2005; Arfo, 2015; Killian et al., 2009).

The aim is to produce a high-quality, responsive system to promote the integration of TVE and to enhance learner flexibility and advancement (UNESCO-UNEVOC, 2014). TVE has the end goal of promoting personal, social, community and economic development by providing skills to facilitate the transition from school to work and to develop lifelong learners.

2.6.3 TVE Teacher Training and Support in South Africa

A study conducted by Zinn et al. (2019) suggested that the research pertaining to the teaching and training of TVE educators in South Africa is limited. When conducting an online search for courses and training for TVE educators, results centre around TVET training for learners or students, lists of TVET colleges and vacancies. Searches on university platforms did not yield results for the training on TVE teachers and the DBE is yet to communicate training for current or future TVE teachers. However, the DBE explained that training for TVE educators or lecturers should include

- Disciplinary training, referring to the study of education and specific and/or specialised subject matter relevant to the field;
- Pedagogical training, pertaining to the principles, the practices and the methods of teaching;
- Practical learning, implying learning in the form of practice, also known as work integrated learning (WIL);
- Situational learning with reference to situations, contexts and environments together with the accompanying policies, political and organisational contexts. This means to learn about the diverse challenges faced by learners in vocational education that will require of the TVE teacher to engage and support (HIV/Aids, poverty, unemployment; discrimination, etc.); and
- Fundamental learning, including conversing at a basic level, information and communication technologies, the acquisition of academic literacies and basic life skills which lay the foundation for effective further learning and decision-making (DBE, 2013).

2.7 CHAPTER SUMMARY

This chapter presented a background of the theory that informed this research. It also presented a detailed review of the literature relevant to the topic of this dissertation. It focused on the TVE systems of three international countries, namely, Finland, Germany and Switzerland. Attention was then paid to the TVE systems of three African countries, namely, Namibia, Botswana and Nigeria. Finally, the TVE system of South Africa was explored in order to gain an understanding of the possible impacts on the needs of the Grade 8 teacher in the preparation for the implementation of TVE in the curriculum.

Chapter 3 provides a detailed analysis of the data collected for the purposes of this study, together with discussion on the findings of this research enquiry.

CHAPTER 3:

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

3.1 INTRODUCTION

Chapter 3 presents the discussion of the findings drawn from the data collected during the interviews. Given the qualitative approach of this study, the discussions stem from the participants' needs (as Grade 8 teachers) in the preparation for the implementation of TVE in the curriculum. From data analysis, in-depth evidence is presented in the form of themes and sub-themes as collected from participants that best responds to the research questions. Thus, this chapter focuses on the presentation of findings in the form of themes and sub-themes as they emerged from the data analysis. It is important for the reader to note that the participants in this research enquiry represent a small sample of Grade 8 teachers in South Africa. Therefore, findings of the sample group cannot be generalised to other schools in the surrounding areas or other schools in South Africa. Furthermore, the data analysis as presented in this chapter was filtered through the researcher's personal experiences and possible bias, given the importance of reflexivity of the study for the findings to be presented with integrity.

This chapter presents a recollection of the research objectives, the research paradigm, approach and design of the study. This is followed by the data collection and analysis, followed by the presentation, overview and the discussion of findings of this research enquiry.

3.2 RESEARCH OBJECTIVES

The objective of this study was to identify the needs of the Grade 8 teacher in the preparation for the implementation of TVE in the curriculum. Chapter 1 served as an introduction to the study and presented a detailed explanation of the data collection methods and data analysis techniques as utilised in the study. Chapter 2 provided a literature review based on an overview of TVE on local and international fronts relevant to this research enquiry.

3.3 RESEARCH PARADIGM

For the intent of this research enquiry, the constructivist paradigm was utilised. Cohen (1994) explained that the constructivist paradigm intends to understand the world of human experience. In concurrence, Mertens (2005) believed that people's reality is socially constructed, thus during social encounters and interactions. Creswell (2014) explained that within the constructivist paradigm, the research enquiry focuses on the views of the participants. The constructivist paradigm was chosen for this study as it allowed the researcher to obtain participants' personally constructed views shaped by their own, unique life experiences and preferences.

3.4 RESEARCH APPROACH

Merriam (2009) explained that a qualitative research approach is best explained by considering what it is not: qualitative research approach is not governed by a specific set of theoretical beliefs (Creswell, 2014). Rather, Creswell (2014) explained that a qualitative study is an approach that allows the researcher to explore and to understand the views, perceptions, or meanings that people or groups of people attribute to a social or "human problem" (Creswell, 2014, p. 246). He explained that qualitative research is "fundamentally interpretive", meaning that the researcher is an active participant in the study with the aim of understanding people's unique life experiences that underpin their perceptions. This approach complements the constructivist paradigm utilised in this study as it has the fundamental aim of making sense of participants' thoughts, feelings, views and interpretations by investigating their personal daily experiences. Furthermore, Creswell (2014) explained that due to the diverse, subjective and thus unpredicted responses and views of participants, the qualitative approach takes on an emergent role, rather than a prefigured framework. This means that the qualitative approach and the openness of such a study allows the thoughts, perceptions and views to emerge, rather than predetermining the outcomes.

In this study, the qualitative research approach focused on the gathering of authentic experiences of Grade 8 teachers. It required these teachers to provide personally constructed meanings or how they make sense of their experiences regarding TVE. These personal constructs enabled them to anticipate or visualise the implementation of TVE in the curriculum. Thus, this research enquiry was not interested in numbers

as with a quantitative approach (Merriam, 2009); rather, it was interested in the hidden meanings of the participants' views through their verbal expressions as observed and collected through the data collection methods used in this enquiry. Therefore, it was important for the researcher to obtain as much information from each of the participants as possible and request clarification instead of making assumptions or drawing unjustified conclusions.

3.5 RESEARCH METHOD

3.5.1 Research Design

Given the qualitative approach of this study, together with the constructivist paradigm and the constructivism theory that informs this research enquiry, a case study was deemed the most appropriate design for the intents of this study. Yin (2014) describes a case study as a specific research method that can (especially) be utilised in contexts wherein the researcher cannot "distinguish the variable and its results". A case study was used since it allowed the researcher to conduct an in-depth investigation of a current occurrence within its real-life situation (Yin, 2009). Because a case study depends on multiple sources of evidence, the data for this study was collected by means of three methods (Yin, 2009) to obtain an understanding of participants' worldviews.

3.5.2 Data Collection

Data collection for the intent of this research was obtained through three methods: semi-structured individual interviews, a focus group interview and photo voice. During the first appointment with all the participants, the researcher explained to how data collection would take place (explained in Chapter 1).

The semi-structured interviews allowed for a combination of structured and unstructured questions (Bell & Waters, 2014). Although the preset questions served as a guide for the interviews, the researcher was able to explore participants' responses and their responses on each other's input. This provided flexibility in all the interviews (ibid.) allowing the researcher to obtain rich data from the participants. The open-ended questions set the ground for interviews which were experienced as conversations, motivating participants to voice their perceptions, opinions and

experiences about the Grade 8 teacher's needs in the preparation for the implementation of TVE in the curriculum (Creswell, 2014). It allowed the researcher to probe participants' views and opinions and to explore their responses to ensure accuracy (Gray, 2009).

The focus group interview allowed the researcher to obtain a level of understanding regarding the participants' comprehension of TVE. Merriam (2009) argued that, as the data gathered from a focus group is a construct created by the social interaction amongst group members, there is a strong constructivist foundation in this method of data collection. This method was thus chosen based on the constructivist paradigm as well as the constructivist theory which informs this research. Unlike with individual interviews (Patton, 2002), the focus group interview allowed participants to listen to each other's responses. It enabled them to comment or contribute beyond their own initial responses. The aim was to obtain high-quality data in a social setting in which participants could assess their perception while engaging with other participants' views (Patton, 2002). In this focus group interview, the group maintained an optimistic and productive group dynamic, respectful and acceptant of various views and opinions.

Photovoice as a data collection technique involves the taking of photographs to present one's thoughts, views and experiences. Mitchell and Allnut (2008) valued the artistic component of this technique to use imagery in unique and individual ways. Participants then engage in a group conversation to discuss their photos. Together with the researcher, they identify various emerging themes (Capous-Desyllas & Bromfield, 2018). Participants chose to use their smartphones to capture images reflecting their perceptions. These photos were discussed during the focus group interview.

3.6 DATA ANALYSIS

The data obtained in this study was analysed using the steps of thematic analysis as suggested by Braun & Clarke (2006). The audio recordings of the individual and group interviews (including photovoice interviews) were transcribed. It eased the data coding process and increased the trustworthiness of this research enquiry (Hennink, Hutter, & Bailey, 2011). Repeated and similar quotations were written on index cards, with the

participant's name and the context in it occurred. The transcriptions and index cards were colour coded based on similarity and used to identify emerging themes (Appendix F). These themes indicated the needs of Grade 8 teachers in the preparation of implementing TVE in the curriculum.

The six steps of data analysis (Braun & Clarke, 2006) were useful to become familiar with the data obtained, to identify themes, code the data and to elaborate on and interpret the collected data. The steps were discussed in Chapter 1; they involve:

Step 1: Familiarisation with the data
Step 2: Generating initial codes
Step 3: Searching for themes
Step 4: Reviewing the themes
Step 5: Defining and naming the themes
Step 6: Producing the report

Creswell (2014) suggests the following question to conclude data analysis of a research enquiry, when writing the report: "What were the lessons learnt?" This was a useful mechanism to answer the research question. These identified themes supplied direct answers to the research question of this study, thus indicating the Grade 8 teachers' needs in the preparation for TVE to be implemented in the curriculum. These themes, thus informed by the research question, are listed in a table below:

Table 3-1: Overview of themes

Theme
1. The Role of Education Stakeholders
1.1 Partnership with Industries
1.2 Community and Parental Involvement
1.3 Learner Placement Assessment
1.4 Promoting TVE
2. The Role of the SMT
2.1 Provision of Policies, Training and Curriculum Support
2.2 Manage Funding and Equipment
3. The Need for Professional Development

Table 3.2 below presents the photos that participants brought to the focus group interview:

Table 3-2: Photovoice data

Participant	Photo	Participant	Photo
Participant A		Participant B	
Participant C		Participant D	
Participant E		Participant F	

The elements of this table are discussed in context under the thematic analysis.

3.7 THEMATIC ANALYSIS

The South African mainstream curriculum embraces academic achievement, with skills development currently available only in 'special schools'. Participants addressed the significant need for TVE in mainstream education. They felt that, although TVE is a valid alternative for learners who battle to cope with the academic demands of the current curriculum, TVE should not be available for this reason only. Rather, four participants highlighted possible preferences amongst learners and/or their parents for practical education as opposed to academic education, ideally in the same mainstream school environment.

"TVE should be like a subject choice; should they wish, all learners should be able to access it." (Participant B).

Thematic analysis indicated that the Grade 8 teachers needs in the preparation for the implementation of TVE in the curriculum could be divided into three themes. Firstly, the role of stakeholders came to the fore. They indicated the necessity for stakeholders to create partnerships with industries and to ensure involvement from the community and parents. They felt that stakeholders should arrange assessment for learners to ensure that the appropriate educational pathways are chosen. Lastly, they indicated the necessity of stakeholders to change possible negative perceptions of TVE by promoting the system.

Secondly, participants indicated their needs from the SMT in the implementation of TVE. They indicated that SMTs should provide school-based policies, communicate continuous training and allocate and manage funding and equipment. Lastly, they indicated the need for professional development.

3.7.1 The Role of Education Stakeholders

With the implementation of TVE in the curriculum to combat youth unemployment, participants prioritised the role of education stakeholders. Stakeholders refer to (1) entities in the education sector such as schools, their School Management Teams (SMT's), districts, and the Gauteng Department of Education (GDE); (2) the labour market (industries); and (3) communities and parents. Participant E highlighted the importance of continued dedication and cooperation from all stakeholders, to ensure the success of a technical and vocational education system. In the focus group interview, she stated: *"Looks like this will have to be a group effort".* To illustrate the need for education stakeholders to the provide for inclusive education system such as TVE, Participant C provided the following photo in the photo voice interview:

Figure 3-1: Photo voice: Participant C

He explained that to him, this photo of a gecko illustrated TVE's ability to equip learners with adaptability:

> *"If learners are given the tools that suit their needs, they flourish. They adapt anywhere. They will have the ability to adapt in various working environments best suited for them".* (Participant C)

In the group interview, he explained that this is ultimately what TVE aims to achieve. Ironically, Participant E's photo addressed the opposite. She provided a photo of a flower being crushed:

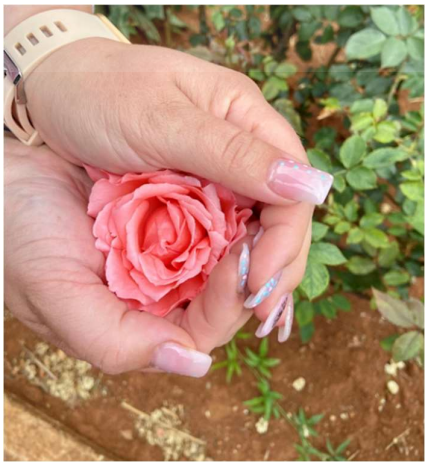

Figure 3-2: Photo voice: Participant E

She illustrated what happens when learners are not equipped with skills to enter into the working environment:

> *"If our learners are educated in systems that do not cater for their needs, their beauty is crushed until they can no longer survive."* (Participant E).

It triangulated with her perception in the semi-structured interview that if our education system cannot meet the demands of learners, they will not be able to find (suitable) employment or to become successful entrepreneurs.

Participants discussed various roles of education stakeholders in the preparation for the implementation of TVE in the curriculum, so that this education system will promote employment by catering for the needs of all learners. These roles are summarised in the following sub themes.

3.7.1.1 Partnerships with Industries

During all the interviews, participants emphasised the education sector's partnerships with industries:

> *"Schools cannot run TVE on their own. Industries will have to assist us in this undertaking."* (Participant E).

> *"TVE will have to be a joint responsibility with the labour market."* (Participant A).

> *"Industries demand learners to matriculate and then immediately be equipped, qualified and job ready. But it is literally impossible, our school system doesn't work like that. We can only do that if industries help us"* (Participant D).

Participant F pointed out a certain home industry who cooks and delivers meals, often selling their goods at sport occasions for school fundraising. She suggested partnership with businesses like these to teach *female* learners how to cook and bake (the patriarchal connotation in this comment will be discussed under the promoting of TVE):

> *"The school must decide how many days per week learners should go to businesses in the area for training. Then girls can go for training at places like*

[name of home industry] for cooking or baking or even beauty salons in the area."

In contrast with our current academic curriculum, participants suggested a shared responsibility for TVE with industries. The dual system (theoretical education at school and practical training at businesses) allows learners to receive on-the-job training in a real life context (Finnish National Agency for Education, 2020) To ensure that TVE remains up to date, offering education and training that matches market trends, participants suggested a rigorous research of supply and demand by industries. Participant B stated that:

"*it won't help to train 20 carpenters while industries demand electricians.*"

Participant D elaborated on supply and demand as he referred to practical training, specifically woodwork, in the earlier years. He described how equipment was outdated, never serviced, and broken or worn-out parts were seldom, if ever, replaced. This made it difficult to manufacture articles or complete projects as required by the curriculum at the time. He pointed out that those classes together with the outcomes were perceived as unimportant and ineffective as they did not link with evolving market trends. He argued that those outcomes would not have equipped him to enter the labour market.

3.7.1.2 Community and Parental Involvement

Participants stressed the value of the involvement of parents and the community in the implementation of TVE in the curriculum. They agreed with Participant C's comment during the group interview that many of the parents of their school are business owners in the community, ranging from small businesses to large formal companies. He named several companies with specific reference to a well-known trailer manufacturer and a renowned car repairs company in their community:

"Every year he takes in a few learners who didn't finish school and gives them training […] he helps them to get a driver's license and they even get a small salary."

Participant D stated that some of these trainees did not complete school. He added that if they were not eventually employed at this firm, the owner aided them in finding suitable employment. To elaborate on Participant C's comment, Participant B illustrated the involvement of parents and members of the community who often assisted the school with sewing, cooking and baking:

> *"Think of [parent of the school], she always volunteers to make the outfits for our concerts. And think of [member of the community], she usually sews for the foundation phase learners. I am sure that they would be more than willing to teach girls how to sew."* (Participant B).

Participant D explained that partnerships with farmers would eliminate the need for land for the planting and harvesting of crops or botany.

Most of the participants pointed out the added benefit of partnerships with industries, that industries could provide teacher training in the relevant trades and regarding the theory to be taught in class. However, in the individual interviews, Participants A and D stressed that TVE entails specialised teaching and that teachers would require training to teach these subjects. They suggested that the partnership with industries could secure continuous training for teachers:

> *"Teachers can attend training at companies so that they have updated knowledge when they teach TVE subjects at school."* (Participant A).

> *"If businesses really get on board, they will be an excellent resource for teachers. Who better to train them than the people who work in these industries every day?"* (Participant D).

Still, Participant B argued that

> *"even if you have a TVE qualification, you will still require continuous training as technologies evolve in industries."*

Participants stressed the value of the involvement of parents and the community in the implementation of TVE in the curriculum. They reasoned that if it was promoted, parents, members of the community and business owners in the community (industries) would support and get involved with the system. Participant E indicated:

"You just need one parent, one influential parent, you know, the parent does something and other parents follow blindly. You just need one parent to choose TVE and it will start a ripple effect. Other parents will soon follow suit."

Billett (2018) emphasised school-industries partnerships, as this joint undertaking enables learners to receive practical, on the job training. This allows for a smoother transition into employment (Thelen, 2014). It is also a crucial factor in ensuring the success and the credibility of the TVE system. The credibility of the system refers of the curriculum framework (to the applicability thereof to the demands of industries), the organisation and the administration of TVE (Billet, Harteis, & Gruber, 2014). Furthermore, the German education sector ensures that industries are well-informed of the benefits of TVE; they argued that this strengthens the partnership (The German Way, 2019). In addition, the dual system ensures that learners receive both practical and theoretical education which in turn ensures that firms and businesses employ trained and qualified youth (The German Way, 2018). The direct connection between education and the labour market prevents unemployment: industries' continued assessment of market trends ensures that learners receive relevant education and training in applicable or demanded fields (SERI, 2019), thus preventing a mismatch between job supply and demand. (Atkings, 2017; SERI, 2018).

3.7.1.3 Learner Placement Assessment

The mission of TVE is to teach the necessary skills to promote employment and self-employment, to enhance the labour market and to cater for lifelong learning (FNBE, 2015). Thus, it is important to ensure that learners are enrolled in pathways that suit their abilities and needs, whether it be an academic pathway or an occupational / vocational route. It is in this regard that participants expressed the importance of learner placement assessments for Grade 7 learners. These assessments refer to aptitude tests and/or career assessments. Participants specifically indicated that these assessments need to occur in Grade 7, the year before learners enter high school, so that feedback can be given to learners, parents and schools if necessary. Feedback on learner placement assessment is vital for informed decision-making, regarding enrolment in either TVE or academic education, as well as subject or trade choices within these streams.

Figure 3-3: Photo Voice: Participant F

In the semi-structured interview, Participant F stressed that learner placement assessment would be necessary not only to ascertain which tier of the three-tier system a learner should choose, but which subjects to take as well. She brought a picture of misfitting puzzle pieces to the photo voice group interview. She explained that it emphasised the importance of learner placement assessment, to ensure that the chosen pathways fit the needs and preferences of the learner:

> *"Aptitude tests or career assessments are extremely important; then a learner knows what subjects will be best for them. Then, the content that the teacher teaches in class will match their abilities and their interests. Automatically they will perform better. That's the whole idea behind TVE, isn't it?"* (Participant F).

She emphasised that enrolment in TVE creates the opportunity of TVE for all learners, as inclusive education implies that all learners are accommodated in a single system. In the group interview, Participant C agreed with her:

> *"I remember doing aptitude tests in school. They need to bring that back to decide if learners should take the academic route, or the TVE route."* (Participant C).

In his semi-structured interview, Participant A also regarded learner placement assessment as a crucial need in the implementation of TVE in the curriculum:

> *"Before learners even consider TVE, the department will have to look at ways to identify which learners should enrol in TVE and which subjects they need to choose. Like aptitude tests. They will need to provide educational*

psychologists to do these assessments and give feedback to the learners and their parents, and maybe schools, before they go to Grade 8." (Participant A).

In a report of the new three-tier education system, Equal Education (2016) indicated the necessity of learners to be assessed for enrolment in TVE. Similarly, the UNHCR (2019) recommends academic and career guidance in psychosocial support to learners in their decision-making regarding academic versus TVE enrolment and career choices "before, during and after enrolment".

3.7.1.4 Promoting TVE

All participants acknowledged and agreed that their initial limited knowledge of TVE had influenced them to believe that TVE is an option for learners who underperform in school. From their personal constructs, some even perceived skills training as an education pathway in schools for learners who misbehave, given their learning challenges. They perceived it as a way to ensure inclusive education in mainstream schools for underperforming learners within a single school system:

"It's often the learners with behavioural problems who end up in skills development, right?" (Participant A).

The comment "*end up* in skills development" illustrated the perception people often have about TVE. However, it is important to note that TVE is the education pathway utilised mainly in schools for learners with challenges to learning and development (Western Cape Government, 2019). These learners often present with behavioural challenges due to heightened frustration levels in an education system that does not cater for their demands (ibid.). It was interesting to note that the same participant stated the following about TVE later in the study, during the group interview:

"Remember, there are many learners who battle in school. Sometimes they just don't cope with the academics. This doesn't mean they aren't intelligent at all, but if you give the same learner a practical task to complete and you'll see a very different picture. They often surprise you." (Participant A).

Participant E emphasised the importance of promoting the concept of TVE for the same reason, that people who do not understand what TVE entails would have a shrewd perception of the system:

> *"Many people might be wary to choose TVE as an alternative to academic education. As a parent, I would. I mean, I have been a teacher for many years and up until this interview I didn't know what TVE was […] it is going to be crucial to promote the system, so that people know what it is. Then they will consider it."* (Participant E).

In the group interview, on questioning whether participants felt that there was a need for TVE in the curriculum, Participant F answered:

> *"For learners who battle academically, definitely. But it's not for those learners only. Some learners would just prefer TVE above academic education."*

This triangulated with her statement in the semi-structured interview that TVE should be available for all learners.

Participant D answered:

> *"I think this also gave people a negative perception about [TVE], that it often results in a dead end. It's because the idea flares up and then it disappears again. One day skills development receives loads of attention and a few months later almost no attention at all."*

In the individual interview, Participant B elaborated on people's possible perceptions of TVE:

> *"I think people think of TVE the way that it used to be, that they teach stuff that is not used in industries anymore."*

While in the focus group interview, she said:

> *"Parents will not choose TVE for their children if equipment is outdated and if the skills taught are not relevant in industries"*

In the focus group interview, participants explained how important it is to promote TVE and that parents often influence each other. Thus, they stressed that the involvement of stakeholders is important to alter negative perceptions about TVE:

> *"You just need one parent, one influential parent, you know, the parent does something and other parents follow blindly. You just need one parent to choose TVE and it will start a ripple effect. Other parents will soon follow suit."*

She added that socio-economic status might influence parents' perceptions of TVE:

> *"Imagine: if a learner from an underprivileged background should enter skills training, people will say, 'shame, it's the* ***only*** *option for him, he battles academically'. But the picture changes completely when a learner from a wealthy background should require skills development. Then it's a good call, a good option for that child."*

Participant C emphasised that TVE should not be *"the second-best option"* in education. Rather, it should be promoted and perceived as:

> *"the best option for that particular learner."*

He argued that:

> *"at the end of the day, parents need to focus on what is the best option for their child to help him to secure a good future."*

I explored participants' references to male learners in the discussion of TVE, enquiring whether they maintained a gender-specific perception of TVE. Participant C confirmed that TVE tended to be gender specific. He explained that you do not often see female learners or girls in skills development. He stated that

> *"it is wrong, I know. It shouldn't be like that. I guess it comes from stereotyping and prejudice over many years."*

Participants emphasised that both genders should enjoy a variety of skills to choose from in the TVE system. However, earlier during the group interview, Participant B mentioned "*teach girls to sew"* while Participant E spoke of training for female learners:

"[…] girls can go for training at places like [name of home industry] for cooking or baking or even beauty salons in the area."

When I explored these gender-based comments in the group interview, they expressed that certain subjects are often perceived as "*male"* or *"female"* subjects. However, participants stated that with the implementation of the TVE system in the curriculum, it should be promoted that subjects can be chosen by learners of any gender.

3.7.1.5 Summary of the Theme

Albert Einstein said, "Everybody is a genius, but if you judge a fish by its ability to climb a tree, it will live its whole life believing it is stupid". This quote rings true considering learners who battle to cope with the academic demands of our current curriculum, while they display outstanding performance when they use and show their practical skills.

In the exploration of the Finnish TVE system, it was found that their system is promoted by a positive regard of the system amongst industries, the education sector, parents, communities and other education stakeholders of their education system (FNBE, 2015). They believe that a cynical communal bias against TVE may have a harmful effect on employment (Subrahmanyam, 2014); they argue that such bias may prevent their youth from enrolling in TVE. Billet (2018), author of the virtual conference report on improving the image of TVE (UNESCO-UNEVOC) indicated that even though TVE has gained recognition in international plans and policies, the perception of TVE still proves to be challenging, especially in comparison with academic education. In the same report, it was argued that even countries with outstanding TVE systems were experiencing a decline in enrolment. This means that a low image of TVE is a universal concern, affecting individuals' motivation to choose TVE as a viable avenue in education.

Regulators should work with all stakeholders to publicise the benefits of TVE through frequent campaigns and school parents' evenings to display learners' work and their achievements. A detailed knowledge of the benefits of TVE promotes the system (Subrahmanyam, 2014).

The low image of TVE is often affected factors such as a lack of clarity of the system and its benefits, a mismatch in supply and demand with industries, and disengagement of parents, communities, industries and other stakeholders (Atkins, 2017; SERI, 2018). Koukku and Paronen (2016) suggested that another reason for a skeptical regard of the TVE system is based on quality concerns: many TVE systems have been associated with substandard achievement, poor quality delivery and limited future prospects (ibid.). For this reason, the Finnish TVE stakeholders pay substantial attention to promoting the benefits of TVE to parents and the community. In Germany, the positive image of TVE is cultivated by ensuring that communities and industries are familiar with the advantages of TVE – it strengthens the partnerships and opportunities between schools and the working sector (Deutsche Welle, 2018).

3.7.2 The Role of the SMT

Three of the participants in this study were members of their school's SMT. This enabled them to draw from their personal experiences of their current role, duties, and challenges to visualise and describe the role of the SMT in the implementation of TVE in the curriculum. These three participants felt that districts needed to ease the implementation by facilitating the process and providing the necessary training to teachers and SMTs respectively. Consequently, districts would have to increase their involvement with schools, as well as the frequency of school visits, particularly in the initial implementation stages. All participants, including SMT members, agreed on the vital need for teacher support from SMTs.

3.7.2.1 Provision of policies, training and curricular support

In the group interview, Participant C stated that the role and responsibilities of the SMT would increase in the implementation of TVE in the curriculum, to incorporate both their current and additional duties. This view was emphasised by the following photo that Participant D provided:

Figure 3-4: Photo voice: Participant D

His photo of a road sign intended to illustrate caution in the implementation of TVE in the curriculum, referring to TVE policies. This linked with his explanation in the semi-structured interview that the SMT needed to provide TVE policies at school level. In the group interview, he emphasised that the SMT must ensure that teachers are trained on these policies, together with the legislation that informs these policies:

> *"It is so important that anything that is done or implemented in schools, like TVE, has to be backed by policies. The SMT must see to it that their teachers know these policies very well, and they must also know which acts or laws of the country guide them."* (Participant D).

Participant A agreed with Participant D's views regarding the importance of the role of the SMT to communicate scholastic and governmental TVE policies to all stakeholders involved. These policies must include contracting between schools and industries with regards to learner placement, safety and so forth, guided by the relevant legislation:

> *"If a teacher takes register in the morning and the learner is absent, how will he or she know if a learner is out for on the job training at a company? And how will the company keep a register of learner attendance? What we also need to consider is, what if a learner gets hurt while they receive training at a company, who will be held responsible?*

In the focus group interview, Participant B recommended that various platforms should be utilised to make TVE policies and the relevant national legislation easily accessible by all stakeholders:

> *"Schools can easily communicate TVE policies to parents, learners and the community. They can use their websites, social media, the D6 communicator."* (Participant B).

She reasoned that awareness and understanding of these policies amongst parents, communities, and industries, would promote TVE.

All participants highlighted the need for the SMT to inform TVE teachers of all relevant courses and training available as presented by the GDE or other stakeholders. The SMT should also be responsible for arranging training by the school's partners in the industries, as this would ensure relevant and modern training by experts in the respective fields. Participant E stressed TVE teachers' need for similar curricular support by the SMT as with the current academic curriculum, such as lesson planning, teaching strategies, curriculum content, and the assessment thereof. Participant F felt that curricular support would be crucial for TVE teachers, especially in the early stages of TVE implementation. She shared a photo of a school project, a popsicle bridge, during the photo voice interview:

Figure 0-5: Photo voice: Participant F

Participant F likened support from the SMT to a bridge. She narrated that the bridge connects two sides or *'contexts'.* One context is a teacher's pre-training or pre-readiness state. The other, is one of teacher readiness, equipped to implement TVE

in the curriculum. Without the bridge (SMT's support) she explained, one cannot reach *"the other side"*:

> *"The SMT needs to assist [teachers] to get from where [they] are now, to actually be capable and empowered to teach TVE subjects."*

She explained that if there was no bridge (SMT support), teachers would

> *"have a tough time finding alternative routes to get to the other side. Without a bridge, getting to the other side will be troublesome and time consuming, like reinventing the wheel."*

This same bridge, she concluded, provided the essential gateway for districts to reach teachers as well. This metaphor illustrates the growth and development from a less informed state to one of readiness and being well-informed and equipped, through social interaction in the zone of proximal development.

Participant C felt that it is role of the SMT to establish and maintain school-industry partnerships with businesses in the community. Participant D supported this view and suggested that the SMT liaise with industries to arrange "open days":

> *"Open days will give businesses the opportunity to demonstrate their products and services to schools, parents, learners and communities."*

This, he felt, would serve the dual purpose of promoting TVE and the various subjects or trades, as well as teaching educators about the level of quality required in the labour market.

3.7.2.2 Allocate and manage funding and equipment

Participants in the study who formed part of the SMT of their school explained that their current duties regarding the allocation and managing of funding, would still apply in the implementation of TVE in the curriculum. Interestingly, it was the male participants of the study who raised concern regarding the affordability of TVE. They reasoned that they were familiar with the costs of equipment, machinery and material necessary to teach practical subjects. They feared that the education sector is not financially equipped to implement TVE in the curriculum:

"This is going to be a very expensive undertaking. If schools cannot partner with businesses, they won't be able to afford this (TVE). *South African education isn't financially strong enough to implement a vocational stream in all schools."* (Participant D).

"The money has to be provided by the department. But one school won't be able to teach a variety of subjects. I think, SMTs of schools in the surrounding areas must get together and decide which school will implement which trades. Then learners attend the different schools based on the subjects they choose." (Participant A).

However, Participant E argued that this suggestion would not be practical, and it would be difficult or costly to execute:

"We need to consider things like transport. Remember, all learners won't be able to commute or afford to commute to schools other than theirs."

While all male participants stressed the significant financial implications of TVE in the curriculum, female participants did not voice their concern about the financial means of our education sector to implement the system. Upon questioning, Participant B explained that she had assumed the funding was already allocated and available for this new undertaking, given that the three-tier system was already piloted in 2017. When Participants E and F were asked, they answered that they had thought the same:

"I didn't even think of the money. I just thought, well, if they have already started doing this at some schools, obviously the money is available for this." (Participant B).

Participant C stressed that partnerships with industries would aid financial implications:

"Companies use the latest technology in their field, so it means that schools won't have the pressure of upgrading their equipment or buying new equipment all the time."

In the focus group interview, Participant C stated that although partnerships with businesses would relieve the financial responsibilities of TVE, the education sector would still be burdened with expenses:

> *"even if partnerships with businesses would help financially, the GDE will still have TVE expenses like material, basic equipment, to service it and renovations of classes or venues to be used as workshops or kitchens and so on."* (Participant C).

He continued to consider possible unreliability or time delay of some industries to become involved in TVE.

With the focus on the financial relief from industries and the allocation of funding, Participant A mentioned the elevated costs of initial staff training as a teacher's needs in the preparation for the implementation of TVE in the curriculum:

> *"If teachers have to go and study again, to teach TVE, who is going to pay for them? That's a lot of money, I mean, you can't just send one teacher to study for TVE."* (Participant A).

In agreement with his perception, Participant E emphasised the ongoing costs involved with lifelong learning:

> *"Teacher training and empowerment will not be a once off expense. Technology advances and the needs from industries will change all the time, so teachers will need continuous training."* (Participant E).

She explained that the success of TVE would rely on the system's ability to balance supply and demand as indicated by industries. This implies costly continuous training and development of teachers to ensure their competence in their fields.

In the semi-structured interview, Participant E focused attention on the equal allocation of funding between subjects:

> *"All subjects must get the same amount of money. The SMT must make sure that panel beating as an example have more funds than, let's say, sewing"*

However, when she mentioned this in the focus group interview, Participant C questioned whether this would always be possible:

> *"I agree with you that no subject must be advantaged over another subject, but maybe the machinery that is necessary for spray painting costs less than a kitchen oven. The SMT should rather see to it that all the subjects are allocated the funding that they need for at least the basic equipment or material."*

3.7.2.3 Summary of the theme

An efficient TVE system calls for policies built on legislation (Subrahmanyam, 2014) and governmental papers, such as the Constitution (1996), the National Education Policy Act (1996), the Children's Act and the Education White Paper 6 (2001). Policies and legislation prevent dead ends as they facilitate agreements between sectors. They should, however, be consistent to ensure that TVE teachers are familiar with policies empowered and function effectively within legal frameworks and parameters. A synthesis report regarding TVET teacher education in Africa indicated that South Africa implements frequent TVET policy changes (European Commission, 2014). The report stated that this led to uncertainty and anxiety amongst teachers which in turn affected their efficiency, sustainability, motivation and thus, future teaching prospects. However, the report also held that South Africa was the only country at that stage had a policy which indicated specific qualifications and standards for TVE teacher education and training.

Switzerland's TVE system includes modern and well-resourced equipment (OECD, 2009). Because training is shared by several institutions and training companies, funding of up-to-date equipment does not rely solely on one school or institution. With each approved training company staying on par with the latest developments, technology and equipment, learners are able to experience high-quality practical training (Skillsonics, 2019). The Finnish education sector stresses the ability of their TVE system to provide quality teaching and training to change negative perceptions and maintain positive perceptions of TVE. They ensure this by providing modern training and technology, evolving with the developments of the labour market (Koukku & Paronen, 2016; Subrahmanyam, 2014). They argue that outdated equipment and mismatches between supply and demand between industries and education result in

substandard training and achievement, poor quality delivery and limited prospects. Unfortunately, these were challenges in the past that created negative perceptions about TVE (Grollmann, 2008).

3.7.3 The Need for Professional Development

Participants highlighted the need for professional development as a vital need in the preparation for the implementation of TVE in the curriculum. They indicated that TVE cannot be successfully implemented if teachers are not developed at a professional level. In the individual interview, Participant D said:

> *"See, one of our biggest problems is the massive shortage of specialised teachers, teachers who are qualified to teach these (TVE) subjects. That is why skills education failed back in my day; any teacher who had any bit of experience, or owned a hammer and a nail, taught woodwork."*

In the group interview, he emphasised his earlier statement:

> *"You cannot implement an education system like this and expect just any teacher on your staff to teach TVE subjects. It is specialised teaching. If you want the system to work, teachers need thorough training and development."*

During the group interview, participants who were SMT members indicated their need for development from a management perspective, to

> *"see to it that all teachers are adequately supported every domain of their profession."* (Participant E).

The photo that Participant A (an SMT member) brought to the photo voice group interview emphasised professional development; thus, the quality of teachers and their teaching will be one of the most influential determinants of the success of the TVE system:

Figure 3-6: Photo voice: Participant A

> *"This photo of a foundation before a house is built made me think of the foundation that should be in place before TVE can be taught. I see a teacher's training as the foundation before they can teach. A teacher who is trained, prepared and has a good knowledge of the subject matter, teaches well. And this will be a very important factor that will determine if people enrol in TVE or not."*

This implies that the professional profile of TVE teachers will be one of the key determinants to influence all stakeholders' perceptions of TVE (including learners, parents and communities). Competent teaching will create positive perceptions of TVE, and as previously discussed in this chapter as well as the literature review, cynical perceptions of TVE could cause the system to fail. Finnish TVE stakeholders emphasised that positive perceptions of a TVE system is what ensures TVE enrolment (Subrahmanyam, 2014).

During the group interview, participants seemed eager to discuss the likelihood of the implementation of TVE in the curriculum. Upon questioning, they reasoned that there are many learners who battle academically, while their intellectual abilities indicate average, or even above average functioning. Participant F stated that

> *"their academic challenges by no means indicate their intellectual abilities"*

and suggested that TVE creates the opportunity for teachers to utilise another teaching style:

"a practical learning and assessment style."

Participant B felt that TVE might create the space for teachers to tap into their excellence, to focus on

> *"a more asset-based approach in teaching, to rather working with a learner's strengths instead of working against their challenges."*

Participant C raised her view and stated that the implementation of TVE in the curriculum was an exciting thought:

> *"To think of two education systems or streams in a single mainstream school makes me very excited. I think it's a great strategy to accommodate all the learners in your class. That is what inclusive education is all about."*

Consequently, all participants indicated the vital necessity and value of TVE-trained, professional teachers firstly, to ensure the efficacy of the system and secondly, for parents, communities and industries to perceive the system as credible and *"trustworthy"* (Participant D).

Participant B focused on teacher training as a vital benefit from partnerships with industries. She highlighted the opportunity for teachers to utilise industries' expertise to develop and ensure their professional development. However, Participants A and D argued that, due to the specialised nature of TVE teaching, teachers would require formal TVE qualifications to guarantee their quality and level of professionalism. They emphasised past failures of practical skills education due to the lack of formally trained or TVE-qualified teachers. Participant D said:

> *"See, one of our biggest problems is the massive shortage of specialised teachers, teachers who are qualified to teach these (TVE) subjects. That is why skills education failed back in my day…"*

Nevertheless, Participant B maintained that once-off pre-training does not ensure quality teaching. She explained that technology evolves all the time and that TVE teachers would require continuous, lifelong training, ideally from the industries:

"the experts… even if you have a TVE qualification, you will still require continuous training as technologies evolve in industries."

Grollmann (2008) stressed that the professionalism and skills of teachers are crucial in ensuring the quality of teachers and consequently, the quality of the TVE system. He argued that with the growing importance and the necessity for lifelong learning, teacher training and the optimising of their skills formed the backbone of a successful TVE system.

3.8 CHAPTER SUMMARY

This chapter investigated the views of research participants on the needs of Grade 8 teachers in the preparation for the implementation of TVE in the curriculum. The research inquiry was guided by the research question, namely: ***What are the Grade 8 teachers' needs in preparing for the implementation of the technical and vocational curriculum in education?***

The data collection processes aligned with the constructivist theory which underpinned this research study. Initially, during the semi-structured interviews, participants' comments and responses seemed superficial, in that they did not provide much reason in support of their views. However, as the study and interviews progressed, it seemed that their responses and reasoning deepened as well. Their discussions especially in the group interview linked to the theory of constructivism, that learning takes place through interactions. Where participants' initial responses and conversation content seemed limited during individual semi-structured interviews, socially constructed knowledge enabled participants to consider and discuss various aspects under the umbrella of TVE. Participants' expanded knowledge empowered them to consider aspects such as cause and effect or comparisons between participants' suggestions. It enabled and encouraged them to (respectfully) challenge peer responses and elaborate or suggest alternative views. The next chapter draws the study to a close and presents the summary, limitations and recommendations.

CHAPTER 4:

SUMMARY, LIMITATIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

The purpose of this chapter is to summarise the findings that stemmed from the research question: what are the Grade 8 teachers' needs in preparing for the implementation of the technical and vocational curriculum in education? Furthermore, this chapter describes the strengths and limitations of the study. Finally, recommendations for further research are made.

4.2 SUMMARY OF FINDINGS FROM THE STUDY

The study adopted a constructivist paradigm within a qualitative research design to explore the Grade 8 teachers' needs in the preparation for the implementation of technical and vocational education in the curriculum. A purposive sample of the Grade 8 teachers at a high school enabled insight into the research question. Qualitative content analysis was used to investigate and analyse the data that was gathered from the participants. As a result, three themes and sub-themes were identified. Ethical considerations as stipulated by Terre Blanche et al. (2006) and Nijhawan (2013), trustworthiness according to Lincoln and Guba (1985), Krefting (1991) and Shenton (2004) were adhered to throughout the study.

The findings of the themes and sub-themes of this study show that the participants were able to identify and discuss various needs of a Grade 8 teacher in the preparation for the implementation of TVE in the curriculum. Although each participant had good insight into what TVE involves, they were unaware of the three-tier education system that had been introduced in some schools in 2017. Still, all participants stated that there is a growing need for TVE in the South African mainstream curriculum.

With regard to the first theme, 'the role of education stakeholders', participants stressed the need for commitment from all education stakeholders, parents and the community to ensure the system's success. They felt partnerships with industries would not only be necessary to train teachers and learners, but also to save costs given their access to equipment. Participants argued the need for the assessment of

learners, such as aptitude tests, to ensure that they are correctly placed in TVE or academic education, together with suitable subject choices. Lastly, participants raised concern regarding the possible negative perceptions of TVE amongst many people as well as stakeholders. They argued that the promoting of TVE would be crucial to guarantee an effective implementation of the system in the curriculum.

In relation to the second theme, 'the role of the SMT', the participants highlighted the importance of the SMT providing teacher training on the underlying policies in the implementation of TVE in the curriculum. Moreover, the participants discussed the elevated costs of the implementation of TVE. Thus, they felt the SMT's governance would be important to ensure that all subjects were allocated proportional funding. They also indicated the importance of the SMT overseeing the maintenance of equipment, such as the arrangement of the servicing of equipment and keeping record or a log sheet of allocated equipment.

'The need for professional development' was the final theme identified in this study. Participants voiced their need for training in all domains of the profession, such as subject content, the arrangement of training offered by districts or industries, assessment and policies. They felt that high-quality teaching would ensure the success of TVE and that it would promote TVE at the same time amongst parents, the community and industries.

The themes and sub-themes that emerged from the data of this research enquiry indicated the needs of the Grade 8 teacher in the preparation for the implementation of TVE in the curriculum. The data that emerged from the study shed light on the participants' various perspectives of the needs of a Grade 8 teacher to ensure a successful implementation of the TVE system. Still, the participants emphasised the importance of the acknowledgement that this undertaking would have to be a joint effort with other education stakeholders. They indicated that the trustworthiness of such a system would be influenced by the system's sustainability – that it should not lead to any dead ends and that the system needs to be implemented with the aim of long-term intervention.

4.3 LIMITATIONS OF THE STUDY

Firstly, the qualitative design in itself together with the characteristics of this research enquiry may have had the largest impact on the quality of the findings. The study revealed the Grade 8 teachers' needs in the preparation in the implementation of TVE in the curriculum. As a consequence, quantitative predictions could not be deduced. This means that the findings of this research enquiry cannot be broadened to the wider population given the lack of certainty that the findings are statistically noteworthy. Additionally, given the characteristics, timeframe and the restrictions of samples of minor dissertations, the results are limited.

The study's qualitative design allowed a sample of six Grade 8 teachers at one mainstream school to provide data through the conducting of interviews. Consequently, it would be beneficial to conduct a study with teachers from various schools – schools of different socio-economic status, e.g., affluent and impoverished schools. The area in which the research enquiry was done had a limited number of Grade 8 teachers. Thus, the findings of the sample group cannot be generalised to other schools in the surrounding areas, or any other areas in South Africa.

Another possible limitation of the study relates to the profiles of the participants of this enquiry. Purposive sampling informed the selection of participants given their matches to the relevant criteria for this study. Although the researcher made every attempt to include Grade 8 teachers from different cultures, there was a lack of cultural diversity. Thus, this limitation might have been reduced if the views and constructs from a more racially diverse sample were accessible. However, to ensure a more racially diverse sample would entail the conducting of the study at various or additional sites.

The researcher established rapport with all the participants to conduct the study. This may serve as a limitation of the study; however, it may serve as a strength as well. The participants' rapport with the researcher may have induced socially desirable responses. Paulhus (2017) defined socially desirable responses as: "habitual tendencies to respond to questions based on item properties such as keying direction and the desirability of the response options" (p. 1). To reduce this limitation, participants' attention may continuously be refocused on the initial assurance that all data gathered during the research enquiry, as well as each participant's personal

details would be kept confidential at all times. All participants were informed of confidentiality when their consent was obtained and when the details of the study were discussed.

4.4 STRENGTHS OF THE STUDY

The most prominent strength of a qualitative research approach is that it is free from explicit or predetermined sets of philosophic assumptions (Merriam, 2009). As discussed in the first chapter, the qualitative research approach allows the researcher to "[see] through the eyes of the people being studied" (Bryman, 2012, p. 399). Thus, given the preferred outcome of obtaining participants' personal experiences and insights, the qualitative approach was the most suitable design for this study. The approach enabled the researcher to obtain a detailed understanding of participants' thoughts about the needs of Grade 8 teachers in the preparation of the implementation of TVE in the curriculum.

Another strength of the study relates to the establishment of rapport as the research enquiry progressed. Bryman (2012) explains that the more time the researcher and the participant spend together, the more likely it is that the data will be honest and valid. The established working relationship that was formed with the participants enabled the researcher to obtain a deepened understanding of their views on the research question through the sharing of their personal experiences. Furthermore, the level of rapport between the researcher and participants elicited a level of trust and respect, which in turn allowed the participants to participate in the interviews comfortably and freely.

4.5 CONCLUSIONS

This study investigated the needs of the Grade 8 teacher in the preparation of the implementation of technical and vocational education in the curriculum. The variety and intensity of teachers' needs was established, and a significant need for the implementation of TVE in the curriculum was highlighted by participants. However, is still a negative perception of TVE which will need to be addressed by the DBE to ensure the future success of such an education system. Regarding the relatively new three-tier education system yet to be implemented in all secondary schools, teachers were uninformed of the system, that it had already been piloted in some schools, nor

had they seen any policies, documentation or some level of feedback based on the implementation of TVE in some schools. Teachers indicated their concern regarding the implementation of TVE in the near future and that there was a lack of a guiding structure to assist and guide teachers in the preparation for the implementation of TVE in the curriculum. Teachers explained that it would be troublesome for them to become skilled not only in the implementation of the TVE system in the curriculum, but also to teach TVE subjects. However, all the participants of this study indicated their willingness to receive professional training and development as they viewed TVE as a vital future component in mainstream schools to accommodate a larger, more inclusive cohort of children in South African schools.

4.6 RECOMMENDATIONS

Given the implementation of TVE in the mainstream curriculum in the near future, teachers would require extensive training to ensure the success thereof. Furthermore, the promoting of TVE would be crucial to replace current negative perceptions of the system which may cause the programme to fail. Lastly, the promotion of TVE can only be assured if all stakeholders involved commit to the joint effort to ensure the success and efficiency of the system in South African schools.

4.7 RECOMMENDATIONS FOR FURTHER RESEARCH

Given the outcomes and experiences of this research enquiry, the following recommendations can be made for future research:

- A repetition of this study with a larger sample of the population of Grade 8 teachers from a variety of schools in South Africa. An increased level of racial diversity of participants, together with the ability to compare with the needs of other Grade 8 teachers in the preparation of the implementation of TVE in curriculum would ensure enhanced findings from this research enquiry.
- A repetition of this study should be conducted at a variety of sites (different schools), especially based on socio-economic status to establish the needs of all teachers in different contexts.
- A repetition of this study is recommended using alternative methods of data collection. Examples may include questionnaires or surveys and collages to ensure enhanced data for analysis.

- In conclusion, it is recommended that should the DBE publish policies and other documentation on the preparation for the implementation of TVE in the curriculum, teachers' needs should be revisited.

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APPENDIX A: ETHICAL CLEARANCE

NHREC Registration Number REC-110613-036

UNIVERSITY OF JOHANNESBURG

ETHICS CLEARANCE

Dear M Steyn

Ethical Clearance Number: 2017-065

Grade 8 teachers' preparedness in implementing technical vocational education (TVE) in the curriculum

Ethical clearance for this study is granted subject to the following conditions:

- If there are major revisions to the research proposal based on recommendations from the Faculty Higher Degrees Committee, a new application for ethical clearance must be submitted.
- If the research question changes significantly so as to alter the nature of the study, it remains the duty of the student to submit a new application.
- It remains the student's responsibility to ensure that all ethical forms and documents related to the research are kept in a safe and secure facility and are available on demand.
- Please quote the reference number above in all future communications and documents.

The Faculty of Education Research Ethics Committee has decided to

☒ Grant ethical clearance for the proposed research.
☐ Provisionally grant ethical clearance for the proposed research
☐ Recommend revision and resubmission of the ethical clearance documents

Sincerely,

Prof Geoffrey Lautenbach
Chair: FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE
28 August 2017

APPENDIX B: PERMISSION FROM SCHOOL TO CONDUCT RESEARCH

[redacted]

[redacted]

Hiermee gee ons toestemming aan

MELISSA STEYN

om 'n navorsingsstudie by [redacted] uit te voer.

Meegaande toestemmingsvorms sal deur haar aan die relevante personeel voorsien word om aan die studie deel te neem.

[redacted]

[redacted]

SKOOLHOOF

APPENDIX C: PARTICIPANT INFORMED CONSENT FORMS

Department of Educational Psychology
Informed Consent – Participants

The Researcher: Melissa Steyn. Email: melispsych@gmail.com

Supervisor: Dr Boitumelo Molebogeng Diale. Email: tumid@uj.ac.za

Title of study: Grade 8 teachers' needs in the preparation for the implementation of technical and vocational education in the curriculum

Purpose of the study: As part of the requirements for a Masters in Educational Psychology at the University of Johannesburg, I will carry out a research study that seeks to analyse the Grade 8 teachers' needs in the preparation for the implementation of technical and vocational education (TVE) in the curriculum. For this study, I would like to gain your permission to take part in this study. The study will enable you to be well informed and prepared with knowledge that will assist you to identify your needs in the preparation of TVE in the curriculum.
In agreeing to participate in this study, you will take part in the following activities:

Activity	Time requirement	Yes √	No ×
Semi-structured interview	30 – 45mins		
Focus group interview	30mins –1 hour		
Photo voice interview	30mins – 1 hour		

Confidentiality: Your participation in this study will remain confidential and identity will not be stored with data. Participation in this study will remain confidential and there will be no link between your responses and identity.

Participation and withdrawal: Participation in this study is completely voluntary and you may withdraw at any time without penalty. You may withdraw by informing the researcher that you no longer wish to participate (no questions will be asked) and data will be destroyed should you withdraw your participation.

Risks: There are no foreseeable risks to the study.

Benefits: There are no financial gains associated with participation in this study.

How to contact the researcher: If you have any questions or concerns about your participation, or want to request a summary of the findings, please contact the researcher: MELISSA STEYN, email: melispsych@gmail.com, phone +27 (0) 83 229 3223. For any problems related to this study, you may also contact my supervisor: Dr BOITUMELO MOLEBOGENG DIALE at tumid@uj.ac.za

Agreement:

The nature and purpose of this research have been sufficiently explained and I agree to give consent of my participation in this study. I understand that I am free to withdraw at any time without incurring any penalty.

Signature: _____ Date: _____

Name (print): _____

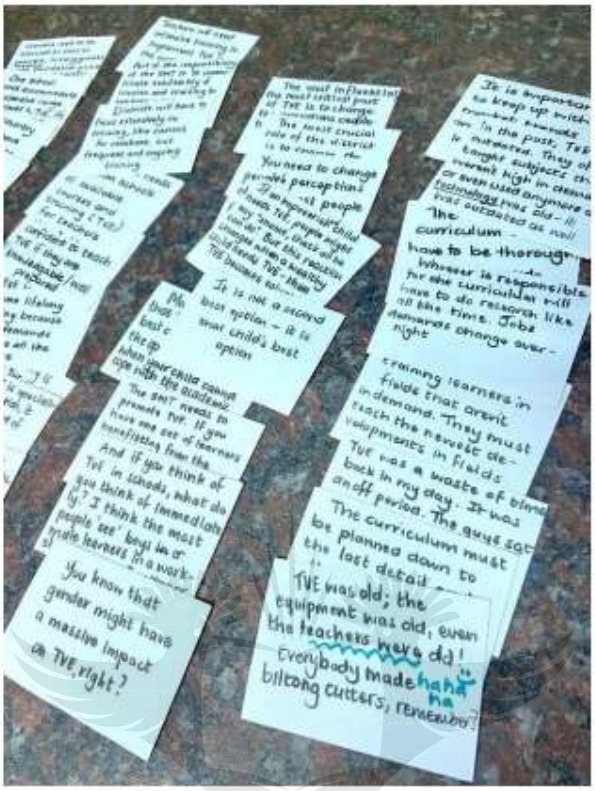
APPENDIX D: SEMI-STRUCTURED INTERVIEW GUIDE

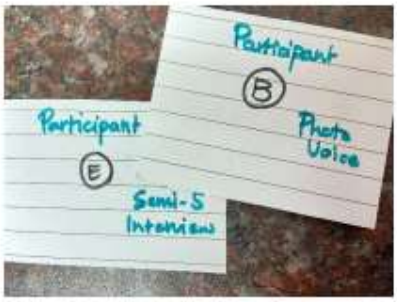
- What is your understanding of technical and vocational education?
- Do you feel that there is a need for TVE in the curriculum?
- From what grade do you think TVE should be implemented?
- What would the role of the SMT be to prepare for the implementation of TVE in the curriculum?
- What would the role of the districts be to prepare for the implementation of TVE in the curriculum?
- What would the role of the DoE be to prepare for the implementation of TVE in the curriculum?
- What other needs do you think teachers might have to prepare for the implementation of TVE in the curriculum?

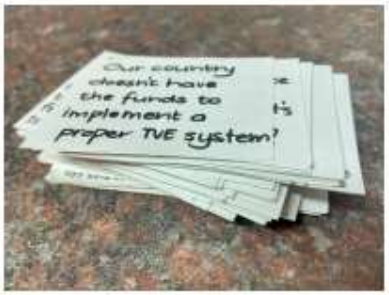
APPENDIX E: FOCUS GROUP INTERVIEW GUIDE

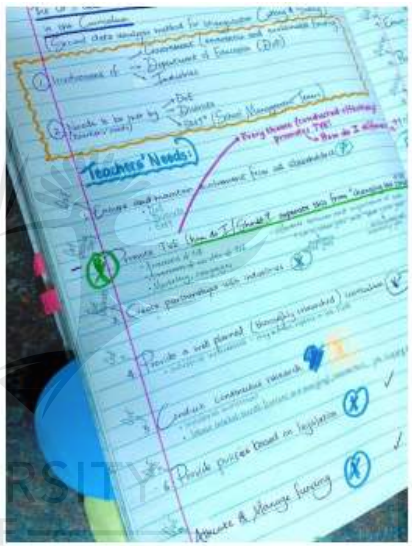
- What is your understanding of technical and vocational education?
- Do you feel that there is a need for TVE in the curriculum?
- From what grade do you think TVE should be implemented?
- What would the role of the SMT be to prepare for the implementation of TVE in the curriculum?
- What would the role of the districts be to prepare for the implementation of TVE in the curriculum?
- What would the role of the DoE be to prepare for the implementation of TVE in the curriculum?
- What other needs do you think teachers might have to prepare for the implementation of TVE in the curriculum?

APPENDIX F: THEMATIC ANALYSIS









APPENDIX G: EXAMPLE OF INTERVIEW TRANSCRIPT

Participant A: (example)

Participant A:	Equipment, training, manpower, it's just too much. TVE must start in high schools.	
Researcher:	So, you are saying that, for now, only in high schools and at a later stage to start in primary schools?	
Participant A:	Yes. In high schools for now, so that it can start then, in Grade 8. Look, the primary schools will be involved in some way, especially if you need to test learners, like aptitude tests, to see if they must take TVE or not, or if they should go on in the academic route. That's what I think. The tests must be done when they are in Grade 7 and the results must be discussed with the parents so that they can make their decisions for Grade 8. It's too expensive to implement TVE in high schools and in primary schools	
Researcher:	That is true.	
Participant A:	You won't be able to build or equip a bunch of workshops and buy the equipment and buy materials and stuff. Then in your regions, the high schools must sit and decide, right, School 1 will do fitting and turning, School 2 will offer hairdressing, cooking and baking, School 3 will do spray painting and panel beating.	
Researcher:	That sounds interesting	
Participant A:	Look, these are only examples. You can do this in different ways, to share costs	
Researcher:	I get it, yes. Which means you think high schools in the area must decide how they want to sort of split it?	
Participant A:	Exactly. That will also reduce the stress of teacher training	
Researcher:	In what way?	
Participant A:	I mean like, if a school only implements 4 or 5 subjects, your teachers only need training in those subjects. If, say you	

APPENDIX H: TURNITIN REPORT

Grade 8 Teachers' Needs in the Preparation for the Implementation of Technical and Vocational Education in the Curriculum

ORIGINALITY REPORT

3%	%	3%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

APPENDIX I: DECLARATION OF PROFESSIONAL EDITING

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30 October 2020

Declaration of professional edit

GRADE 8 TEACHERS' NEEDS IN THE PREPARATION FOR THE IMPLEMENTATION OF TECHNICAL AND VOCATIONAL EDUCATION IN THE CURRICULUM

By

Melissa Steyn

I declare that I have edited and proofread this thesis. My involvement was restricted to language usage and spelling, completeness and consistency, referencing style and formatting of headings, captions and Table of Contents. I did no structural re-writing of the content.

I am qualified to have done such editing, being in possession of a Bachelor's degree with a major in English, having taught English to matriculation, and having a Certificate in Copy Editing from the University of Cape Town. I have edited more than 200 Masters and Doctoral theses, as well as articles, books and reports.

As the copy editor, I am not responsible for detecting, or removing, passages in the document that closely resemble other texts and could thus be viewed as plagiarism. I am not accountable for any changes made to this document by the author or any other party subsequent to the date of this declaration.

Sincerely,

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University of Cape Town: Certificate in Copy Editing
University of Cape Town: Certificate in Corporate Coaching

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Jacqui Baumgardt
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